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A New Sample of Gamma-Ray Emitting Jetted Active Galactic Nuclei

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Abstract: We considered the fourth catalog of gamma-ray point sources produced by the *Fermi* Large Area Telescope (LAT) and selected only jetted active galactic nuclei (AGN) or sources with no specific classification, but with a low-frequency counterpart. Our final list is composed of 2980 gamma-ray point sources. We then searched for optical spectra in all the available literature and publicly available databases, to measure redshifts and to confirm or change the original LAT classification. Our final list of gamma-ray emitting jetted AGN is composed of BL Lac Objects (40%), flat-spectrum radio quasars (23%), misaligned AGN (2.8%), narrow-line Seyfert 1, Seyfert, and low-ionization nuclear emission-line region galaxies (1.9%). We also found a significant number of objects changing from one type to another, and vice versa (changing-look AGN, 1.1%). About 30% of gamma-ray sources still have an ambiguous classification or lack one altogether.

Keywords: BL Lac objects; quasars; Seyfert galaxies; relativistic jets

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1. Introduction

The current paradigm of jetted active galactic nuclei (AGN) is mostly rooted in the seminal works by Rees, Schmidt, Blandford, Fanaroff, Riley, Orr, Browne, Barthel, Urry, Padovani, Ghisellini, just to cite a few [1–9]. Jetted AGN are basically divided into two main classes depending on the jet viewing angle (aligned with the Earth or not), which in turn are divided into two subclasses depending on the accretion rate. Flat-spectrum radio quasars (FSRQ) and BL Lac Objects have a small jet viewing angle, but the former have disks accreting at high rate, while the latter have weak and inefficient disks. They form the so-called blazar sequence, with FSRQs on one side, emitting high jet power, and BL Lac Objects on the opposite side, with low jet power. Misaligned AGN are commonly called radio galaxies, and are also divided according to the accretion rate into High-Excitation Radio Galaxies (HERG) and Low-Excitation Radio Galaxies (LERG). All these objects are powered by central supermassive black holes ($M \gtrsim 10^8 M_\odot$) hosted in giant elliptical galaxies (see [10] for a recent review).

However, the discovery of powerful relativistic jets from Narrow-Line Seyfert 1 galaxies (NLS1s) proved that the zoo of jetted AGN is more variegated than previously thought (see, for example, [11,12] for recent reviews). Although, NLS1s have been proven to be

the low-luminosity tail of the FSRQs distribution [13], the relatively small mass of their central black hole and the high accretion rate implied that the blazar sequence no longer stands [14]. Therefore, it is important to keep the NLS1s classification separated from that of FSRQs, to avoid losing important physical information and implications, such as the second branch in the Jet-Disk plane (JD-plane), the branch of small-mass/high-accretion AGN [14].

Today, understanding the impact of NLS1s on the population of gamma-ray sources is hampered by the small number of known objects of this type ($\sim$ 20 [15]). In addition, recent studies on large samples are done by using computer-based procedures designed according to the old paradigm, which implies that this new class of objects is not recognized. Therefore, in order to have a large sample of gamma-ray emitting jetted AGN with updated and reliable optical classification and spectroscopic redshift, we performed the reclassification of the gamma-ray sources in the *Fermi* Large Area Telescope (LAT) (4FGL-DR2, [16], 4LAC, [17]) with extragalactic or unclassified counterparts (with the exclusion of starburst and normal galaxies), and outside the Galactic plane ($|b| > 10°$). We collected 2980 gamma-ray point sources[1]. Then, for each source we searched for redshift measurements and optical spectra in the literature and data through the following public databases:

- Set of Identifications, Measurements and Bibliography for Astronomical Data (SIMBAD[2]);
- NASA/IPAC Extragalactic Database (NED[3]);
- SAO/NASA Astrophysics Data System (ADS[4]);
- Sloan Digital Sky Survey (SDSS DR16[5]);
- Large Sky Area Multi-Object Fiber Spectroscopic Telescope (LAMOST DR6V2[6]).

Preliminary results of this work (right ascension 0^h–12^h, J2000) have been published in 2021 ([18], Paper I hereafter), and we refer to that paper for more details on the adopted procedures and explanations of the new classes of AGN.

2. Classification and Redshift

The full list of sources with their new classification is available in Appendix A. Table 1 summarizes the statistics of gamma-ray emitting jetted AGN after our reclassification, the fraction of sources with spectroscopic redshift, and the statistics from the original 4FGL-DR2 catalog. The sky distribution (Galactic coordinates, Aitoff projection) is shown in Figure 1. It is worth noting that there are some differences of classes between our classification and that of 4FGL, as explained in the notes of Table 1. We refer to Paper I for more details.

We also searched for photometric redshifts z_p from a variety of catalogs and found at least one value for 2631 sources (88%, see Table A2). The complete (spectroscopic plus photometric) redshift distribution of sources is displayed in Figure 2. This information must be considered with care, because we noted some discrepancies between the coordinates of the counterparts given in the 4FGL and those available in radio databases. We generally considered valid the 4FGL coordinates, although we point out some cases of significant offsets (see also Section 3).

Table 1. Distribution of gamma-ray emitting jetted AGN according to the present work and comparison with the original 4FGL subsample. Columns: (1) Classification according to our criteria; (2) number N of sources of the corresponding class; (3) percentage of sources with spectroscopic redshift z; (4) number of sources with the same (or similar) classification in the 4FGL. The notes at the end of the table explain the differences between the present classification criteria and those of the 4FGL.

Classification	**N**	z	**4FGL**
BL Lac Object (BLLAC)	1207	47.2%	1204
Flat-spectrum radio quasar (FSRQ)	695	99.7%	703
Misaligned AGN (MIS [1])	85	96.5%	45
Narrow-Line Seyfert 1 galaxy (NLS1)	24	100%	9
Seyfert galaxy (SEY [2])	32	100%	0
Ambiguous (AMB)	42	69%	-
Changing-look AGN (CLAGN)	34	100%	-
Unclassified (UNCL [3])	861	0.1%	1009
Total	2980	49% [4]	2980 [5]

[1] The MIS class includes the 4FGL classes RDG/rdg, SSRQ/ssrq, and CSS/css. [2] Seyfert class includes Seyfert 1, 2, intermediate, and LINERS. [3] The UNCL class includes the 4FGL classes BCU/bcu, and UNK/unk. [4] Photometric redshift is also available for another 43% of sources. Therefore, 93% of sources do have a redshift value. [5] 4FGL contains also 10 sources classified as non-blazar active galaxy (AGN/agn), which were reclassified as BLLAC (1), MIS (3), CLAGN (3), UNCL (3).

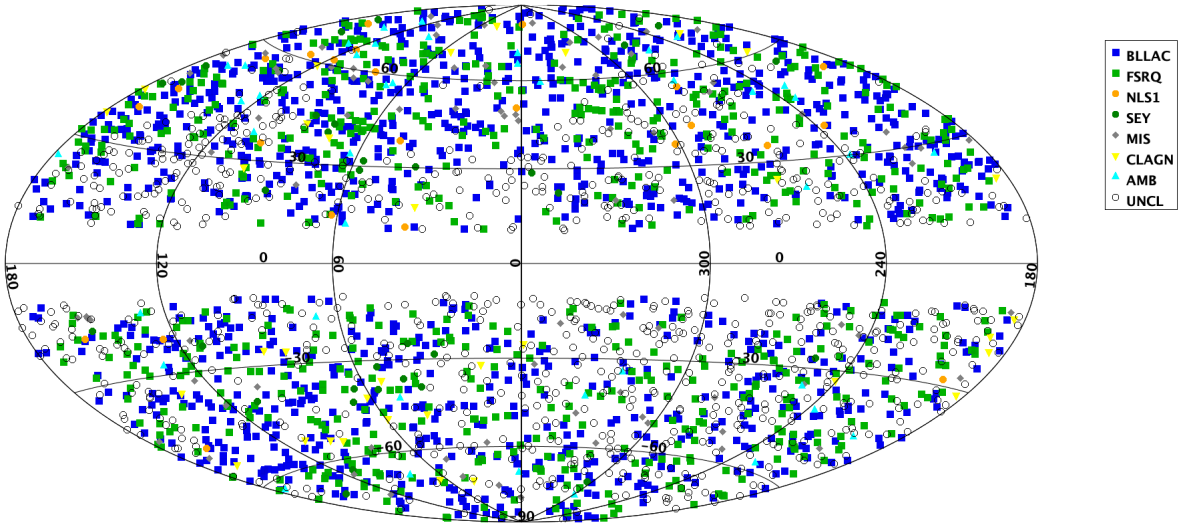

Figure 1. Distribution of the present list of gamma-ray sources in the sky (Galactic coordinates, Aitoff projection) according to the new classification.

Although in Table A1 we include photometric redshifts only for the sources without a spectroscopic one (42% of the total sample), the availability of both measurements for a large sample of sources allowed us to give a rough estimation of the reliability of $z_{\rm p}$. As shown in Figure 3, there is some linear relationship between the two measurements for values smaller than one, but, for greater values, $z_{\rm p}$ tends to be underestimated with respect to the spectroscopic measurements: while $z_{\rm p} \lesssim 2.5$, the spectroscopic redshift reached values up to $\sim$4.3. Figure 4 displays the distribution of the difference $\Delta = z_{\rm p} - z$, between photometric and spectroscopic redshifts: in most of cases, the photometric redshift is underestimated with respect to the spectroscopic one by $\Delta \lesssim -0.1$.

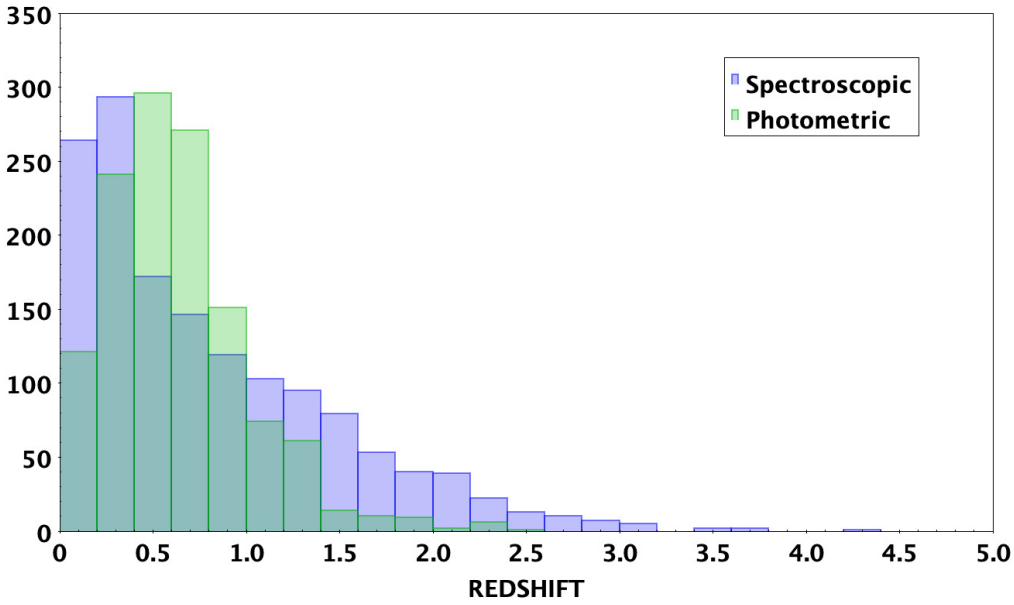

Figure 2. Distribution of the redshifts (spectroscopic and photometric).

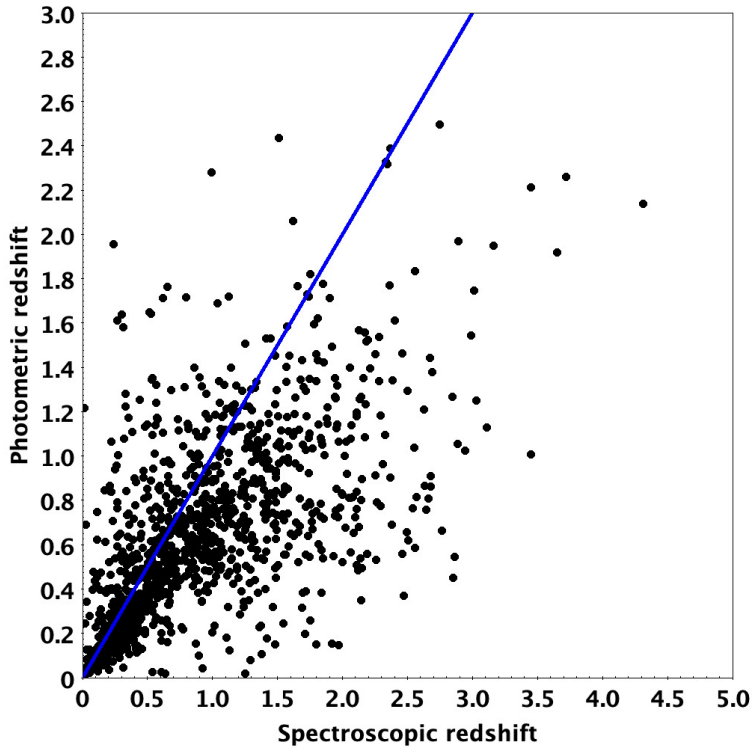

Figure 3. Comparison of photometric redshift with spectroscopic one, for those sources having both values. The blue line shows the function $y = x$.

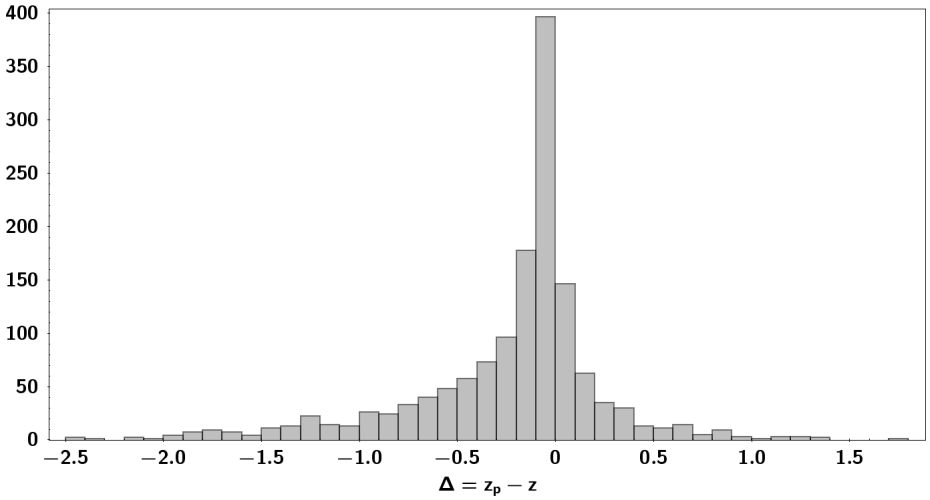

Figure 4. Distribution of the difference $\Delta = z_{\rm p} - z$ between the photometric and spectroscopic redshifts.

It is also worth reporting the breakdown of our new classes, according to more common notations. For example, the MIS class contains 85 sources divided into: 8 Fanaroff-Riley type 0 (FR0), 35 FRI, 18 FRII, 7 compact steep-spectrum sources (CSS), and 1 steep-spectrum radio quasar (SSRQ). For the remaining 16 sources, we did not find publications with specific identification according to the above cited subclasses.

The AMB class contains a very heterogeneous set of sources, because the ambiguity can be due to different reasons:

- the difficulty to have a clear measure of the viewing angle, and so to distinguish between beamed and unbeamed jets (18 cases);
- different values of spectroscopic redshift, but no spectra published, making it impossible to choose the more reliable value (9);
- only a value of redshift without published spectra or any information about lines (3);
- Seyfert vs. NLS1, when no measurement of the full width half maximum (FWHM) of the Hβ emission line is available (5);
- issues in the counterpart coordinates, see Section 3 (6);
- the possibility that the counterpart might be a Galactic source (1).

Further studies might solve these issues and change the number of objects in one class or another.

Most of CLAGN are beamed jetted AGN (30), transitioning from a featureless continuum to a line-dominated spectrum or vice versa, or displaying a change of the spectral energy distribution (e.g., J2345.2 − 1555 alias PMN J2345 − 1555 [19]). Three cases are misaligned AGN (J0014.2 + 0854 = MS 0011.7 + 0837; J0522.9 − 3628 = PKS 0521 − 36; J0910.0 + 4257 = 3C 216), and one curious case (J2334.9 − 2346 alias PKS 2331 − 240) refers to a change of the jet viewing angle, from a misaligned (MIS) to an aligned source (SEY) [20]. It is difficult to establish the real impact of CLAGN on the overall classification and population statistics, because most of the sources in the present sample do have only one optical spectrum. However, this is a very important point: the apparent classification is time-dependent and it would be desirable to move to more physics-based classifications.

3. Caveats

We have already pointed out some sources classified as AMB, because there were problems in the coordinates of the counterpart. For example, the 4FGL coordinates of the counterpart of J0438.7 − 3441 differ by $\sim 36'$ from those of the gamma-ray centroid and located far outside the 95% error ellipse ($3.6' \times 3.1'$). There is only one radio source inside the error ellipse of the gamma-ray source, so that we changed the 4FGL counterpart

with this radio source and set the classification as AMB, because it needs more study to be confirmed or rejected.

It is worth citing another complex example: J2127.6 − 5959 is associated with NGC 7059, a nearby starforming spiral galaxy ($z = 0.00578$). However, the 4FGL coordinates of the counterpart are not consistent with the center of the galaxy (difference $\sim 1'$). These coordinates are consistent with a *ROSAT* source, 1RXS J212728.9 − 600049 (error radius $\sim 15''$, therefore not consistent with the galaxy center[7]). *Swift* follow-up of the gamma-ray source suggested a slightly different counterpart Swift J212729.3 − 600102 (distant $\sim 13''$ from the *ROSAT* source), although consistent within the position errors with the *ROSAT* source [21,22]. However, at radio frequencies, there are two counterparts observed at 944 MHz with the Australian SKA Pathfinder (ASKAP) Evolutionary Map of the Universe (EMU, [23]) Pilot Survey: one is consistent with the centroid of 1RXS J212728.9 − 600049 ($\sim$2 mJy flux density and deconvolved size of $\sim 27'' \times 10'$); the other is consistent with the centroid of Swift J212729.3 − 600102 ($\sim$2.9 mJy flux density and is only barely resolved, $\sim 9'' \times 7''$, J. Marvil, NRAO, priv. comm.). Therefore, more detailed studies are needed to assess the real counterpart of the gamma-ray source 4FGL J2127.6 − 5959.

These examples show that sometimes we found inconsistencies between the name of the associated counterpart and its coordinates, but we decided to keep as reference the coordinates, and wrote potential issues in the notes. We also noted some minor differences (at arcsecond level) between the 4FGL coordinates and the values reported in radio catalogs, but again we kept 4FGL as reference, because this type of investigation is beyond our aims. However, we note that this discrepancy may affect the photometric redshifts reported in Table A2.

Another caveat refers to the classification. As previously stated, we made this reclassification almost completely according to the published information. This does not imply that it is carved into the stone. Particularly, large data sets cannot be analyzed directly by human being[8] and require computer-aided procedures, which in turn—being prepared having in mind certain quantities and characteristics—can easily miss interlopers and outliers. Therefore, computer-aided analyses must be always verified, particularly if the spectrum displays strong noise or distortion of the line profiles.

The case of J1443.9 + 2501 (PKS 1441 + 25, $z = 0.940$) is exemplary: Shaw et al. [24] measured FWHM(Hβ) $= 1600 \pm 400$ km/s from a very noisy spectrum, with Hβ barely visible and flooded in a strong background (the spectrum is available only in the online version of Shaw's work[9]). The SDSS spectrum[10] is a bit better, and clearly shows the Hβ-[OIII] complex. Rakshit et al. [25] performed the measurement of the spectral properties of a large sample of AGN in the SDSS DR14. For PKS 1441 + 25, they measured FWHM(Hβ) $= 1962 \pm 433$ km/s. Were these measurements correct, this AGN should be classified as NLS1, an unexpected and great result, because PKS 1441 + 25 was detected in 2015 at Very High Energies (VHE) by the MAGIC telescope [26]. Therefore, given the importance of the possible result, we reanalyzed the publicly available SDSS spectrum. The Hβ profile is significantly distorted, with an apparent red wing, as like as the MgII. The line shape was decomposed into a narrow blue component and a broad red one. We measured FWHM(H$\beta_{\rm n,blue}$) $\sim$ 1700 km/s for the former, and FWHM(H$\beta_{\rm b,red}$) $\sim$ 3500 km/s for the latter (see Figure 5), thus rejecting the NLS1 classification and to confirm the FSRQ one. These profiles can be fit with a relativistic accretion disk model oriented almost face-on, with $R_{\rm in} = 250 r_{\rm g}$ ($r_{\rm g}$ is the gravitational radius), $R_{\rm out} = 3000 r_{\rm g}$, 5° inclination, emissivity exponent $a = 2.5$ (continuum power law $\propto R^{-a}$), and local dispersion of Hβ $\sigma/\nu_0 = 2.8 \times 10^{-3}$ [27]. These parameters are consistent with their aligned classification, and with the current interpretation of the quasar main sequence [28,29]: for low FeII emission the line width is governed mainly by orientation (see Figure 3 of [30]). Similar cases of distorted emission-line profiles has been detected in many FSRQs and are likely due to low-ionization outflows [31] or gravitational redshift [32]. It is also worth noting that NLS1s do generally have Lorentzian profiles and the significant red wing apparent in the SDSS spectrum was another point against the NLS1 classification. To estimate the mass

of the central black hole, it is better to use the [OIII], given the significant distortion of the Hβ line profile. We measured a FWHM([OIII]) $\sim$ 500 km/s and, by applying the $M - \sigma_*$ relationship [33] (see also Equation (6) in [34]), we can estimate $M \sim 4 \times 10^8 M_\odot$, which is typical for FSRQs.

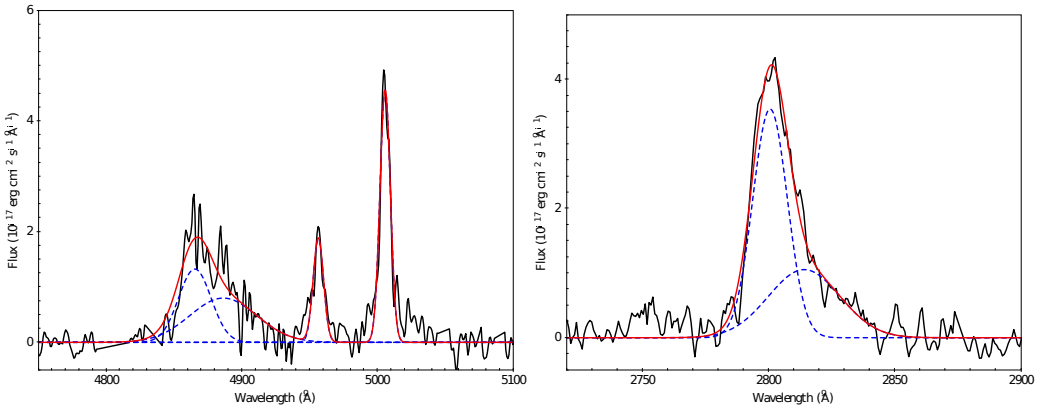

Figure 5. Reanalysis of SDSS spectrum of PKS 1441 + 25: (**left panel**) Hβ and [OIII] complex; (**right panel**) MgII. Both Hβ and MgII display a clear red wing, and were fitted with a narrower component plus a broader red one (blue dashed lines). The SDSS spectrum is represented by a black continuous line, while the individual components are depicted with dashed blue lines. The model sum of the different components is a red continuous line.

We already started a parallel follow-up program to reanalyze the publicly available optical spectra for the NLS1 and SEY classes, and to ask for new high-quality observations. The new data, when available, will be reported elsewhere. Here we just want to remind that the present results have to be taken *cum grano salis*.

Last, but not least, works like the present one never end. New observations can improve or reject the current classification and the gamma-ray sky is still an effervescent research field, so that new papers are published at a non-negligible rate. The present work includes information published until 30 August 2022.

4. Comparison with CGRO/EGRET

The present reclassification resulted in 24 NLS1s and 32 Seyfert/LINERs candidates or confirmed ones. Therefore, it is rather obvious to wonder if Seyfert-type AGN could have been detected by the EGRET instrument onboard the *Compton Gamma-Ray Observatory*. Although it is expected that the jet power of highly-accreting small-mass black holes hosted by NLS1s scales with $M^{17/12}$ [35], it is also known that strong gamma-ray outbursts have been observed from NLS1 by *Fermi*/LAT, with fluxes exceeding $\sim 10^{-6}$ ph cm^{-2} s^{-1} at energies greater than 100 MeV (e.g., [36–39]). These values are within the capabilities of *CGRO*/EGRET. Therefore, we cross-matched our reclassified list of gamma-ray sources with the Third EGRET Catalog [40] by using an error circle of one degree. We found 100 matches, subdivided into 54 FSRQ, 30 BLLAC, 2 NLS1, 2 MIS, 1 AMB, 3 CLAGN, and 8 UNCL.

The two NLS1 are:

1. 4FGL J0001.5 + 2113 = 3EG J2359 + 2041: in this case, the EGRET source was originally associated with the FSRQ TXS 2356 + 196 ($z = 1.07$), while the LAT source, with an improved error circle, has a different counterpart, TXS 2358 + 209 ($z = 0.439$). The SDSS spectrum[11] of the latter clearly displays a Hβ with a Lorentzian profile and the FeII bumps. The analysis by Wu & Shen [41] resulted in FWHM(Hβ) = 1766 $\pm$ 316 km/s and an estimated mass of the central black hole of $\sim 5 \times 10^7 M_\odot$.
2. 4FGL J0442.6 − 0017 = 3EG J0442 − 0033: the gamma-ray source is associated in both cases with PKS 0440 − 00 ($z = 0.844$), which was classified as AGN [40], and later as FSRQ [42]. Shaw [24] measured FWHM(Hβ) = 1700 $\pm$ 1100 km/s, formally NLS1,

but the error is so large to cast significant doubts. A multiwavelength study of this jetted AGN favoring the NLS1 classification has been recently presented by Jessica Luna at the workshop *Panchromatic View of the Life-Cycle of AGN* (14–16 September 2022, ESA/ESAC, Spain)[12]. However, an optical spectrum with better S/N is needed to confirm this classification.

It is also worth noting another case: 4FGL J1321.1 + 2216 = 3EG J1323 + 2200, associated with the FSRQ TXS 1324 + 224 ($z = 1.4$) by EGRET and to a different counterpart by LAT, TXS 1318 + 225 ($z = 0.946$). For the latter, we found three measurements of the FWHM(Hβ): 1700 ± 300 km/s [24], 5377 ± 843 km/s [25], and 3725 ± 412 km/s [41]. Therefore, Shaw's measurement suggested it might be a NLS1, but a quick look at the SDSS spectrum[13] shows evident red wings in the profiles of MgII and Hβ, although the latter is strongly affected by noise. It seems to be a case similar to PKS 1441 + 25, outlined in the previous section, which implies a FSRQ classification.

To summarize, in the first case the finding of a NLS1 was not possible because of a poor EGRET contours probability, which in turn led to a wrong counterpart, while in the second one, the counterpart is the same as for LAT, but a reliable optical spectrum is still missing to confirm the classification. These few possible detections can be explained by the smaller field of view (FOV) of EGRET[14] ($\sim$0.5 sr vs. $>$2 sr of LAT), which means that almost pointed observations were required to catch a flare of a NLS1. On the opposite, *Fermi*/LAT, with its large FOV and excellent sensitivity, can scan the entire sky every three hours, implying a significant increase of the probability to detect an outburst from Seyfert-type jetted AGN.

5. The Twilight Zone

The manual screening of such a large sample of cosmic sources gave us the opportunity to observe many unusual features of these objects. Among the most interesting cases, there are:

1. 4FGL J1416.1 + 1320 = PKS B1413 + 135: the jetted AGN is behind a Seyfert 2 galaxy at $z = 0.247$ [43];
2. 4FGL J1615.6 + 4712 = B3 1614 + 473: the SDSS image[15] shows the object forming something like a circle with other apparently close objects, perhaps an Einstein ring?;
3. 4FGL J1647.5 + 4950 = SBS 1646 + 499: this jetted AGN is a Seyfert hosted in a spiral galaxy, where a SNII exploded in 2009 (2009fe, see Figure 15 in [44]);
4. 4FGL J1744.0 + 1935 = S3 1741 + 19: it is a triple interacting system [45];
5. 4FGL J2204.3 + 0438 = 4C +04.77: originally classified as BL Lac Object, because of small equivalent width emission lines, once the host galaxy continuum is removed, it clearly displays a Seyfert-1 spectrum (see Figure 4 in [46]);
6. 4FGL J2302.8 − 1841 = PKS 2300 − 18: tidal interaction with a close companion, precessing jet [47];

6. Final Remarks

We presented a list of 2980 gamma-ray sources from the Fourth *Fermi* LAT point-source catalog, with revised classification and spectroscopic or photometric redshift. The main result is that the gamma-ray emitting jetted AGN zoo is more variegated than previously thought, with emerging populations of Seyfert-type AGN. It is also worth noting that an AGN can change classification with time on human time scales, because of intrinsic changes in the emission mechanisms.

We would like to stress that users should read the literature thoroughly before using their data and conclusions. A simple cross-match of catalogs at different frequencies is not sufficient. A lot of high-level information (which can be found only in published papers, because it required a human analysis) can be missed, with significant impact on the knowledge about the nature of these cosmic sources. In addition, as we already noted in the

Paper I, online databases may not be updated with the most recent findings or occasionally contain plain errors.

Author Contributions: Conceptualization, L.F.; Writing—Original Draft, L.F.; and Writing—Review and Editing, L.F., M.L.L., H.A., S.C., P.M., S.A., M.B., E.D.B., E.J., M.J.M.M., P.R., M.T., S.V., A.V. All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement: The list of sources is available in Appendix A. All the publicly available data and published references can be accessed through the hyperlinks. Photometric redshifts are available in Table A2.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. List of Gamma-Ray Emitting Jetted Active Galactic Nuclei

Column explanation for Table A1:

1. 4FGL-DR2 name (JHHHH.H ± DDDD);
2. 4FGL-DR2 counterpart;
3. Right Ascension (J2000) of the counterpart [deg];
4. Declination (J2000) of the counterpart [deg];
5. Redshift (max 3 significant digits);
6. Reference where the first measurement of z is reported;
7. 4FGL-DR2 original classification (see the 4FGL catalog paper for explanation);
8. Revised classification, based on optical spectra:
   - FSRQ: Flat-Spectrum Radio Quasar;
   - BLLAC: BL Lac Object;
   - NLS1: Narrow-Line Seyfert 1 Galaxy;
   - SEY: Seyfert galaxy (Type 1, 2, intermediate, LINER);
   - MIS: Misaligned Jetted AGN;
   - CLAGN: Changing-look AGN;
   - AMB: ambiguous;
   - UNCL: unclassified;

   see Paper I for details and explanation of the proposed classification;
9. Flag for the redshift:

- 0: spectroscopic redshift;
- 1: non-spectroscopic redshift (photometric, imaging of the host galaxy, cross-correlation with zero-velocity template, from nearby galaxies in a cluster);
- 2: featureless/inconclusive spectrum;
- 3: no optical data found;

10. Notes
    - Radio spectral indexes ($S_\nu \propto \nu^\alpha$) are mostly from Specfind (Vollmer+ 2009) or calculated by using SED data from NED ($\alpha > -0.5$, flat or inverted spectrum; $\alpha < -0.5$, steep spectrum);
    - If zFlag=1 or 2, then the reference is to the latest optical spectrum, unless specified otherwise.

Please note that the hyperlinks open directly the web pages with the full-text articles from NASA/ADS or publicly available optical spectra. All hyperlinks have been accessed for a check on 30 August 2022.

Table A1. See the text for explanation.

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0001.2 + 4741	B3 2358 + 474	0.3293	+47.7002	0.545	Table A2	bcu	UNCL	1	-
J0001.2 − 0747	PMN J0001 − 0746	0.3251	−7.7741	0.382	Table A2	bll	BLLAC	1	Shaw+(2013)
J0001.5 + 2113	TXS 2358 + 209	0.3849	+21.2267	0.439	Muñoz+(2003)	fsrq	NLS1	0	SIMBAD and NED reported an old $z = 1.106$ by Falco+(1998) based on the lines [CIII], Ne V, He I. Muñoz is based on Ne IV, Mg II, He I, [OIII]. SDSS confirms Muñoz+(2003) value. It also shows the Hβ-[OIII] complex, with evident FeII bumps on both sides, and Wu+Shen (2022) measured FWHM(Hβ) $= 1766 \pm 316$ km/s. The profile of Hβ is enlarged toward the basis, suggesting it might be an intermediate Seyfert.
J0001.6 − 4156	2MASS J00013275 − 4155252	0.3865	−41.9237	0.290	Table A2	bcu	UNCL	1	-
J0002.1 − 6728	SUMSS J000215 − 672653	0.5633	−67.4482	0.219	Table A2	bcu	BLLAC	1	Desai+(2019)
J0002.3 − 0815	WISEA J000236.06 − 081532.4	0.6503	−8.2590	0.545	Table A2	bcu	UNCL	1	-
J0002.4 − 5156	WISE J000229.20 − 515227.4	0.6217	−51.8743	0.717	Table A2	bcu	UNCL	1	-
J0003.1 − 5248	RBS 6	0.8317	−52.7909	0.309	Table A2	bcu	UNCL	1	-
J0003.3 − 1928	PKS 0000 − 197	0.8278	−19.4562	0.711	Table A2	bcu	UNCL	1	-
J0003.3 − 5905	PMN J0003 − 5905	0.8055	−59.0966	0.636	Table A2	bcu	UNCL	1	-
J0003.9 − 1149	PMN J0004 − 1148	1.0205	−11.8162	0.519	Table A2	bll	BLLAC	1	Healey+ (2008)
J0004.0 + 0840	SDSS J000359.23 + 084138.1	0.9968	+8.6939	1.36	Table A2	bcu	BLLAC	1	Paiano+ (2019)
J0004.3 + 4614	MG4 J000421 + 4615	1.0672	+46.2550	1.81	Sowards-Emmerd+ (2003)	fsrq	FSRQ	0	-
J0004.4 − 4737	PKS 0002 − 478	1.1486	−47.6054	0.880	Shaw+ (2012)	fsrq	FSRQ	0	-
J0005.9 + 3824	S4 0003 + 38	1.4882	+38.3375	0.229	Stickel & Kühr (1994)	fsrq	FSRQ	0	-
J0006.3 − 0620	PKS 0003 − 066	1.5579	−6.3931	0.347	Jones+ (2009)	bll	BLLAC	0	-
J0006.4 + 0135	NVSS J000626 + 013611	1.6122	+1.6029	0.787	Paiano+ (2019)	bcu	BLLAC	0	-
J0007.7 + 4008	NVSS J000741 + 400830	1.9236	+40.1416	-	-	bcu	UNCL	3	-
J0008.0 + 4711	MG4 J000800 + 4712	1.9999	+47.2022	2.32	Table A2	bll	BLLAC	1	Both NED and SIMBAD give $z = 0.28$ from Kock+ (1996), but this value is based on a partial and featureless spectrum. Kock suggested that value on the basis of two possible absorption features from the host galaxy (G-band, Na). Never confirmed. Paiano+ (2017) still found a featureless spectrum.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0008.0 − 3937	PMN J0008 − 3945	2.0383	−39.7564	1.33	Table A2	bcu	UNCL	1	-
J0008.4 + 1455	NVSS J000825 + 145635	2.1058	+14.9433	1.07	Table A2	bcu	UNCL	1	-
J0008.4 − 2339	RBS 16	2.1475	−23.6578	0.147	Schwope+ (2000)	bll	BLLAC	0	-
J0009.1 + 0628	TXS 0006 + 061	2.2664	+6.4726	0.682	Table A2	bll	BLLAC	1	SDSS
J0009.3 + 5030	NVSS J000922 + 503028	2.3448	+50.5080	0.589	Table A2	bll	BLLAC	1	Paiano+ (2020)
J0009.7 − 3217	IC 1531	2.3982	−32.2769	0.0256	da Costa+ (1991)	rdg	MIS	0	FRI, Bassi+ (2018)
J0009.8 + 1340	RX J0009.9 + 1341	2.4884	+13.6830	0.471	Table A2	bcu	UNCL	1	-
J0009.8 − 4317	SUMSS J000949 − 431654	2.4573	−43.2806	0.200	Table A2	bll	BLLAC	1	6dF
J0010.6 + 2043	TXS 0007 + 205	2.6198	+20.7972	0.598	SDSS	fsrq	FSRQ	0	-
J0010.6 − 3025	PKS 0008 − 307	2.6489	−30.4632	1.19	Landt+ (2001)	fsrq	FSRQ	0	-
J0010.8 − 2154	PKS 0008 − 222	2.7235	−21.9512	1.17	Table A2	bcu	UNCL	1	-
J0011.4 + 0057	RX J0011.5 + 0058	2.8767	+0.9644	1.49	SDSS	fsrq	FSRQ	0	-
J0011.4 − 4110	PMN J0011 − 4105	2.9683	−41.0959	0.834	Table A2	bcu	UNCL	1	-
J0011.8 − 3142	SUMSS J001141 − 314220	2.9239	−31.7058	0.944	Table A2	bcu	UNCL	1	-
J0013.1 − 3955	PKS 0010 − 401	3.2496	−39.9072	0.434	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0013.4 + 0950	1RXS J001328.4 + 094942	3.3700	+9.8251	0.226	Table A2	bcu	UNCL	1	-
J0013.6 + 4051	4C +40.01	3.3797	+40.8603	0.255	Thompson+ (1992)	agn	MIS	0	Thompson+ (1992) measured the redshift on the basis of [OIII] line and suggested a classification as NELRG. Véron-Cetty & Véron (2010) classify it as Seyfert 1.9, thus confirming an obscured object at large viewing angle. Kayanoki+Fukazawa (2022) classified it as FRII.
J0013.6 − 0424	PKS 0011 − 046	3.4755	−4.3979	1.08	SDSS	fsrq	FSRQ	0	-
J0013.9 − 1854	RBS 30	3.4835	−18.9019	0.0948	Jones+ (2009)	bll	BLLAC	0	-
J0014.1 + 1910	MG3 J001356 + 1910	3.4849	+19.1783	0.477	Shaw+ (2013)	bll	BLLAC	0	-
J0014.1 − 5022	RBS 32	3.5478	−50.3764	0.176	Table A2	bll	BLLAC	1	6dF
J0014.2 + 0854	MS 0011.7 + 0837	3.5822	+8.9006	0.163	SDSS	bll	CLAGN	0	The SDSS spectrum displays evident lines (Hα+NII, [OIII]), but Rector+ (1999) published a very different spectrum (featureless, see Figure 5), although it measured the same redshift via absorption features of the host galaxy. Rector also reported a FRI classification (MIS) on the basis of VLA radio maps.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0014.3 − 0500	GALEXASC J001420.46 − 045929.1	3.5851	−4.9913	0.791	SDSS	bcu	FSRQ	0	-
J0014.9 + 3212	3C 6	3.7756	+32.2704	0.414	Table A2	bcu	UNCL	1	-
J0015.2 + 3537	RX J0015.4 + 3536	3.8662	+35.6108	0.491	Table A2	bll	BLLAC	1	Piranomonte+ (2007)
J0015.9 + 2440	GB6 J0016 + 2440	4.0151	+24.6707	0.485	Table A2	bcu	BLLAC	1	SDSS
J0016.2 − 0016	S3 0013 − 00	4.0462	−0.2535	1.58	SDSS	fsrq	FSRQ	0	-
J0016.5 + 1702	GB6 J0015 + 1700	3.9166	+17.0113	1.72	Shaw+ (2012)	fsrq	FSRQ	0	SDSS
J0017.0 − 0649	PMN J0017 − 0650	4.2891	−6.8426	0.357	Table A2	bcu	UNCL	1	-
J0017.5 − 0514	PMN J0017 − 0512	4.3992	−5.2116	0.227	Healey+ (2008)	FSRQ	FSRQ	0	-
J0017.8 + 1455	GB6 J0017 + 1450	4.4038	+14.8505	0.303	SDSS	bll	BLLAC	0	-
J0018.4 + 2946	RBS 42	4.6158	+29.7920	0.1	Fischer+ (1998)	bll	BLLAC	1	-
J0019.2 − 5640	PMN J0019 − 5641	4.8609	−56.6951	0.522	Table A2	bcu	UNCL	1	-
J0019.3 − 8152	PMN J0019 − 8152	4.8360	−81.8809	-	-	bll	BLLAC	2	Shaw+ (2013)
J0019.6 + 2022	PKS 0017 + 200	4.9077	+20.3627	0.775	Table A2	bll	BLLAC	1	SDSS
J0019.6 + 7327	S5 0016 + 73	4.9408	+73.4583	1.78	Lawrence+ (1996)	fsrq	FSRQ	0	-
J0021.0 + 0322	2MASS J00205023 + 0323578	5.2094	+3.3995	0.652	Table A2	bcu	UNCL	1	-
J0021.5 − 2552	CRATES J002132.55 − 255049.3	5.3856	−25.8471	0.390	Table A2	bll	BLLAC	1	Titov+ (2017)
J0021.6 − 0855	NVSS J002142 − 090044	5.4260	−9.0123	0.648	SDSS	bll	BLLAC	0	-
J0021.9 − 5140	1RXS J002159.2 − 514028	5.5003	−51.6734	0.25	Arsioli+ (2015)	bll	BLLAC	1	-
J0022.0 + 0006	RX J0022.0 + 0006	5.5040	+0.1161	0.306	Brinkmann+ (2000)	bll	BLLAC	0	SDSS
J0022.1 − 1854	1RXS J002209.2 − 185333	5.5386	−18.8930	0.856	Table A2	bll	BLLAC	1	Shaw+ (2013) indicated $z > 0.774$ on the basis of absorption features identified as an intervening system, while Ackermann+ (2016) suggested that those features are of the host galaxy and, therefore, set $z = 0.774$.
J0022.5 + 0608	PKS 0019 + 058	5.6352	+6.1345	2.86	Truebenbach & Darling (2017)	bll	BLLAC	0	-
J0023.7 + 4457	B3 0020 + 446	5.8977	+44.9433	1.06	Healey+ (2008)	fsrq	FSRQ	0	-
J0023.7 − 6820	PKS 0021 − 686	6.0280	−68.3485	0.354	Mahony+ (2011)	bcu	MIS	0	Callingham+ (2017) reported the peak of radio emission at 177 MHz. Steep radio spectrum ($\alpha \sim -0.6$).
J0023.9 + 1603	87GB 002122.5 + 154553	6.0053	+16.0428	0.732	Table A2	bll	BLLAC	1	SDSS
J0024.4 + 4647	B3 0021 + 464	6.0897	+46.7351	1.44	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0024.7 + 0349	GB6 J0024 + 0349	6.1884	+3.8177	0.546	SDSS	fsrq	FSRQ	0	-
J0025.2 − 2231	PMN J0025 − 2228	6.3510	−22.4632	0.834	Titov+ (2013)	fsrq	FSRQ	0	-
J0025.7 − 4801	SUMSS J002545 − 480356	6.4409	−48.0653	0.554	Table A2	bcu	UNCL	1	-
J0026.6 − 4600	1RXS J002636.3 − 460101	6.6475	−46.0197	-	-	bll	BLLAC	2	Thomas+ (1998)
J0028.1 + 7505	GB6 J0028 + 7506	7.0544	+75.1036	1.00	Table A2	bcu	UNCL	1	-
J0028.4 + 2001	TXS 0025 + 197	7.1242	+20.0074	1.55	SDSS	fsrq	FSRQ	0	-
J0028.8 − 0112	PKS 0026 − 014	7.2541	−1.2283	0.0828	SDSS	bll	SEY	0	FRI radio morphology (Capetti+ 2019), but flat radio spectrum of the core (Healey+ 2007).
J0028.9 + 3553	GB6 J0028 + 3550	7.2165	+35.8433	0.581	Table A2	bcu	UNCL	1	-
J0029.0 − 7044	PKS 0026 − 710	7.1732	−70.7544	-	-	bll	BLLAC	2	Shaw+ (2013)
J0029.4 + 2051	NVSS J002928 + 205332	7.3692	+20.8927	0.257	Table A2	bcu	UNCL	1	-
J0030.2 − 1647	2MASS J00302045 − 1647130	7.5852	−16.7870	0.237	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J0030.3 − 4224	PKS 0027 − 426	7.5729	−42.4129	0.495	Hook+ (2003)	fsrq	FSRQ	0	SIMBAD reports $z = 1.66$ from Hewitt & Burbidge (1989), which in turn is from Savage (1984): she reported two emission lines at 4120 and 5080 Å identified as CIV and CIII]. No spectrum is published. Hook published the spectrum, where the two lines are identified as MgII and [NeV], respectively. Other lines are reported ([NeIII], Hδ, Hγ), confirming $z = 0.495$.
J0030.6 − 0212	PKS B0027 − 024	7.6326	−2.1989	1.80	SDSS	bcu	FSRQ	0	-
J0031.3 + 0726	NVSS J003119 + 072456	7.8321	+7.4149	0.827	Table A2	bll	BLLAC	1	Marchesi+ (2018)
J0032.3 − 5522	SUMSS J003210 − 552228	8.0455	−55.3744	1.19	Table A2	bcu	UNCL	1	-
J0032.4 − 2849	PMN J0032 − 2849	8.1379	−28.8223	0.324	Landt & Bignall (2008)	bll	BLLAC	0	-
J0033.3 − 2040	RBS 75	8.3436	−20.6523	0.0727	Schwope (2000)	bll	BLLAC	0	-
J0033.5 − 1921	KUV 00311 − 1938	8.3933	−19.3592	0.936	Table A2	bll	BLLAC	1	Both SIMBAD and NED indicated $z = 0.61$ from Giommi+ (2005), which in turn refer to Bauer+ (2000) and Piranomonte+ (2007). The former did not indicate any redshift and classify it as BL Lac Object, while the latter reported an uncertain $z = 0.61$ from an unpublished featureless spectrum with a weak EW. Shaw+ (2013) and Pita+ (2014) still found featureless spectra.
J0033.9 + 3858	MG3 J003408 + 3901	8.5100	+39.0104	0.743	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0034.0 − 4116	PKS 0031 − 415	8.5184	−41.2721	1.14	Table A2	bcu	UNCL	1	-
J0035.0 − 5728	PMN J0035 − 5726	8.7644	−57.4356	0.272	Table A2	bcu	UNCL	1	-
J0035.2 + 1514	RX J0035.2 + 1515	8.8114	+15.2512	0.721	Table A2	bll	BLLAC	1	Paiano+ (2017)
J0035.8 − 0837	PMN J0035 − 0836	8.9427	−8.5983	0.965	Table A2	bcu	UNCL	1	-
J0036.9 + 1832	CRATES J003659.39 + 1832037	9.2475	+18.5343	1.59	SDSS	bcu	FSRQ	0	-
J0037.6 + 3653	4C +36.01	9.4423	+36.9864	0.366	Vermeulen & Taylor (1995)	fsrq	FSRQ	0	-
J0037.8 + 1239	NVSS J003750 + 123818	9.4620	+12.6389	0.0890	Shaw+ (2013)	bll	BLLAC	0	-
J0037.9 + 2612	WISE J003719.15 + 261312.6	9.3298	+26.2201	0.148	Falco+ (1998)	bll	FSRQ	0	SDSS
J0038.1 + 0012	NVSS J003808 + 001336	9.5355	+0.2268	0.532	Table A2	bll	BLLAC	1	Both NED and SIMBAD give $z = 0.739$ based on Croom+ (2009), which in turn used a SDSS spectrum and marked it as not reliable. Additionally, a more recent SDSS spectrum is inconclusive.
J0038.2 − 2459	PKS 0035 − 252	9.5614	−24.9840	0.498	Jones+ (2009)	fsrq	FSRQ	0	6dF. Jauncey+ (1984) reported $z = 1.196$ on the basis of three weak emission lines (spectrum unpublished). The two spectra have a partial overlap (6dF, 4000 − 7500 Å; Jauncey, 3500 − 8000 Å) and only one line in common at 4195 Å, which is identified as MgII by Jones, and CIII] by Jauncey. Since the FWHM is quite large (Jauncey reported $\sim$ 4200 km/s), the MgII identification seems to be the more likely.
J0038.7 − 0204	3C 17	9.5855	−2.1279	0.220	Schmidt (1965)	rdg	MIS	0	SDSS. FRII, Balmaverde+ (2019).
J0039.0 − 0946	TXS 0036 − 099	9.7762	−9.7130	2.10	Sowards-Emmerd+ (2004)	fsrq	FSRQ	0	-
J0039.1 + 4330	NVSS J003907 + 433015	9.7840	+43.5041	0.541	Table A2	bcu	UNCL	1	-
J0039.1 − 2219	PMN J0039 − 2220	9.7842	−22.3337	0.0644	Vettolani+ (1989)	bcu	BLLAC	0	Loveday (1996) classified the host galaxy as lenticular (S0).
J0040.3 + 4050	B3 0037 + 405	10.0575	+40.8346	0.295	Table A2	bll	BLLAC	1	Marchesi+ (2018)
J0040.4 − 2340	PMN J0040 − 2340	10.1038	−23.6669	0.213	Landt & Bignall (2008)	bll	BLLAC	0	The authors referred to an unpublished spectrum and flagged it as uncertain, but the value was later confirmed by Marchesini+ (2019).
J0040.9 + 3203	TXS 0038 + 319	10.3164	+32.1854	0.632	SDSS	bcu	FSRQ	0	-
J0041.4 + 3800	B3 0038 + 377	10.3460	+37.9822	0.380	Fittingoff+ (2009)	fsrq	FSRQ	0	-
J0041.9 − 4702	RBS 97	10.4459	−47.0269	0.150	Schwope+ (2000)	bcu	BLLAC	0	-
J0042.0 + 3640	RX J0042.0 + 3641	10.5333	+36.6867	0.524	Table A2	bll	BLLAC	1	Piranomonte+ (2007)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0042.2 + 2319	PKS 0039 + 230	10.5189	+23.3336	1.43	Healey+ (2008)	fsrq	FSRQ	0	SDSS
J0043.5 − 0442	1RXS J004333.7 − 044257	10.8922	−4.7168	1.42	Table A2	bll	BLLAC	1	SDSS
J0043.6 + 2223	TXS 0040 + 221	10.8905	+22.3963	0.604	Table A2	bcu	BLLAC	1	SDSS
J0043.7 − 1116	1RXS J004349.3 − 111612	10.9528	−11.2687	0.264	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J0043.8 + 3425	GB6 J0043 + 3426	10.9535	+34.4406	0.966	Shaw+ (2012)	fsrq	FSRQ	0	The automatic pipeline of the SDSS spectrum suggest $z = 3.514$, on the basis of a feature identified as Lyα. The same feature was identified by Shaw+ (2012) as Mg II.
J0044.2 − 8424	PKS 0044 − 84	11.1112	−84.3778	1.03	Shaw+ (2012)	fsrq	FSRQ	0	-
J0045.1 − 3706	PKS 0042 − 373	11.3003	−37.0968	1.03	Klindt+ (2017)	bcu	FSRQ	0	-
J0045.3 + 2128	GB6 J0045 + 2127	11.3304	+21.4611	0.425	Paiano+ (2020)	bll	BLLAC	0	SDSS
J0045.7 + 1217	GB6 J0045 + 1217	11.4306	+12.2866	0.255	Paiano+ (2020)	bll	BLLAC	0	SDSS
J0047.1 − 6203	PKS 0045 − 623	11.8551	−62.1274	-	-	bcu	UNCL	3	-
J0047.9 + 2233	GB6 J0048 + 2234	12.0109	+22.5900	1.16	Shaw+ (2012)	fsrq	FSRQ	0	SDSS
J0047.9 + 3947	B3 0045 + 395	11.9801	+39.8160	0.252	Djorgovski+ (1995)	bll	BLLAC	0	-
J0048.6 − 2427	1RXS J004836.9 − 242631	12.1541	−24.4482	0.364	Table A2	bcu	UNCL	1	-
J0049.0 + 2252	CRATES J004901.37 + 225315.4	12.2557	+22.8876	0.264	SDSS	bll	MIS	0	In a cluster. Steep radio spectrum with detection at 74 MHz (VLSS), but Liu & Zhang (2002) reported a one-side jet: head-tail radio galaxy?
J0049.1 + 4223	GALEXASC J004859.14 + 422351.4	12.2465	+42.3975	0.302	Paiano+ (2017)	bcu	BLLAC	0	-
J0049.4 − 5402	PMN J0049 − 5402	12.4535	−54.0454	0.168	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0049.5 − 4150	SUMSS J004938 − 415140	12.4123	−41.8604	0.286	Table A2	bcu	UNCL	1	-
J0049.6 − 4500	PMN J0049 − 4457	12.3193	−44.9531	0.121	Schectman+ (1996)	bcu	SEY	0	Schwope+ (2000) classified it as Seyfert.
J0049.7 + 0237	PKS 0047 + 023	12.4301	+2.6177	1.47	Shaw+ (2013)	bll	BLLAC	0	-
J0050.0 − 5736	PKS 0047 − 579	12.4978	−57.6409	1.80	Peterson+ (1976)	fsrq	FSRQ	0	-
J0050.4 − 0452	PKS 0047 − 051	12.5897	−4.8724	0.920	Healey+ (2008)	fsrq	FSRQ	0	-
J0050.7 − 0929	PKS 0048 − 09	12.6722	−9.4848	0.635	Shaw+ (2013)	BLL	BLLAC	0	-
J0051.1 − 0648	PKS 0048 − 071	12.7842	−6.8340	1.98	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0051.2 − 6242	1RXS J005117.7 − 624154	12.8194	−62.7012	0.168	Table A2	bll	BLLAC	1	Masetti+ (2013)
J0051.5 − 4220	PKS 0048 − 427	12.7896	−42.4426	1.75	White+ (1988)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0052.9 − 6644	PMN J0052 − 6641	13.2167	−66.6880	-	-	bcu	MIS	3	MIS (composite) from Australia Telescope Low-Brightness Survey (ATLBS) by Subrahmanyan+ (2010). Steep radio spectrum.
J0054.4 + 8627	WN B0046.2 + 8611	13.1369	+86.4623	0.894	Table A2	bcu	UNCL	1	-
J0054.7 − 2455	FRBA J0054 − 2455	13.6948	−24.9248	0.313	Table A2	bll	BLLAC	1	SIMBAD gives $z = 0.61$ from Neronov+ (2015), who in turn did not give any reference. Featureless spectra are reported by Masetti+ (2013) and Shaw+ (2013).
J0054.8 − 1954	TXS 0052 − 201	13.6373	−19.8836	1.07	Table A2	bcu	UNCL	1	-
J0055.1 − 1219	TXS 0052 − 125	13.7991	−12.2992	1.34	Table A2	bcu	UNCL	1	-
J0056.3 − 0935	TXS 0053 − 098	14.0837	−9.6083	0.103	SDSS	bll	MIS	0	FRI, head-tail, Miraghaei & Best (2017).
J0056.4 − 2118	PMN J0056 − 2117	14.1345	−21.2856	0.442	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0056.5 − 3936	NVSS J005620 − 394144	14.0838	−39.6957	0.263	Peña-Herazo+ (2021)	bcu	AMB	0	Classified as double radio source by Zanichelli+ (2001), but without further specific notes. Flat radio spectrum: BLLAC? Vettolani+ (1998) reported $z = 0.308$, but no spectrum published.
J0056.6 − 4452	PKS 0054 − 451	14.1911	−44.8506	0.385	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0056.6 − 5317	CRATES J005630.93 − 531931.5	14.1289	−53.3254	0.317	Table A2	bcu	UNCL	1	-
J0056.8 + 1626	TXS 0054 + 161	14.2304	+16.4204	0.206	Sowards-Emmerd+ (2005)	bll	BLLAC	0	-
J0057.0 + 4101	87GB 005415.3 + 404404	14.2676	+40.9987	0.558	Table A2	bcu	UNCL	1	-
J0057.3 + 2216	87GB 005452.5 + 220227	14.3888	+22.3115	0.707	Table A2	bcu	BLLAC	1	Healey+ (2008)
J0057.7 + 3023	NGC 315	14.4537	+30.3524	0.0167	Colla+ (1975)	rdg	MIS	0	Classified as FRI by Venturi+ (1993). Barth+ (1999) classified it as LINER 1.9 in an elliptical galaxy.
J0058.0 − 0539	PKS 0055 − 059	14.5211	−5.6645	1.25	Titov+ (2011)	fsrq	FSRQ	0	-
J0058.0 − 3233	PKS 0055 − 328	14.5093	−32.5724	0.320	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0058.3 + 1723	RX J00582 + 1723	14.5699	+17.3871	0.286	Table A2	bll	UNCL	1	-
J0058.4 + 3315	MG3 J005830 + 3311	14.6336	+33.1881	1.37	Shaw+ (2012)	fsrq	FSRQ	0	-
J0059.2 + 0006	PKS 0056 − 00	14.7730	+0.1143	0.719	SDSS	fsrq	FSRQ	0	-
J0059.3 − 0152	RX J0059.3 − 0150	14.8205	−1.8382	0.144	Shaw+ (2013)	bll	BLLAC	0	SDSS
J0059.5 − 3338	PKS B0057 − 338	15.0391	−33.6255	0.874	Tinney (1999)	fsrq	FSRQ	0	-
J0059.5 − 3512	1RXS J005932.3 − 351049	14.8811	−35.1803	0.284	Table A2	bll	BLLAC	1	Mahony+ (2010)
J0100.3 + 0745	GB6 J0100 + 0745	15.0866	+7.7643	0.983	Table A2	bll	BLLAC	1	Shaw+ (2013)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0101.0 − 0059	NVSS J010058 − 005547	15.2425	−0.9299	0.545	Table A2	bll	BLLAC	1	SDSS. Ching+ (2017) suggested $z = 0.668$ on the basis of SDSS-DR7 spectrum.
J0101.7 − 5455	MRSS 151 − 121576	15.4242	−54.9306	0.261	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0101.8 − 7543	PKS 0101 − 76	15.5778	−75.7810	1.02	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0102.0 + 1639	TXS 0059 + 163	15.4905	+16.6614	0.549	Table A2	bcu	UNCL	1	-
J0102.4 + 0942	2MASS J01021713 + 0944098	15.5713	+9.7360	0.421	Paiano+ (2017)	bcu	BLLAC	0	SDSS
J0102.4 + 4214	GB6 J0102 + 4214	15.6131	+42.2386	0.874	Shaw+ (2012)	fsrq	NLS1	0	Shaw+ (2012) reported FWHM(Hβ)$\sim$ 1900 km/s.
J0102.6 − 5639	PKS 0100 − 568	15.5436	−56.6179	0.386	Table A2	bcu	UNCL	1	-
J0102.7 − 2001	PMN J0102 − 2001	15.7123	−20.0329	0.37	Rajagopal+ (2021)	bcu	BLLAC	0	-
J0103.1 + 4954	GB6 J0103 + 4959	15.8154	+49.9912	0.832	Table A2	bcu	UNCL	1	-
J0103.5 + 1526	TXS 0100 + 151	15.8583	+15.4402	0.246	SDSS	bll	BLLAC	0	-
J0103.8 + 1321	NVSS J010345 + 132346	15.9406	+13.3959	0.490	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J0104.8 − 2416	PKS 0102 − 245	16.2425	−24.2746	1.747	Shaw+ (2012)	fsrq	FSRQ	0	-
J0105.1 + 3929	GB6 J0105 + 3928	16.2883	+39.4709	0.440	Shaw+ (2013)	bll	BLLAC	0	Marlow+ (2000) reported $z = 0.083$ on the basis of two possible lines (Hα, [OII]), but they themselves flagged it as uncertain. The value measured by Shaw+ (2013) is based on features of the host galaxy.
J0106.9 − 4832	PMN J0106 − 4831	16.7320	−48.5248	0.662	Table A2	bcu	UNCL	1	-
J0107.3 − 1210	PMN J0107 − 1211	16.7991	−12.1898	0.307	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0107.4 + 0334	PMN J0107 + 0333	16.8690	+3.5635	0.869	Table A2	bll	BLLAC	1	SDSS
J0108.1 − 0039	PKS 0105 − 008	17.1118	−0.6234	1.37	Strittmatter+ (1974)	fsrq	FSRQ	0	SDSS
J0108.6 + 0134	4C +01.02	17.1615	+1.5834	2.11	Burbidge (1968)	fsrq	FSRQ	0	SDSS
J0109.1 + 1815	MG1 J010908 + 1816	17.2841	+18.2688	0.444	Shaw+ (2013)	bll	BLLAC	0	SDSS. NED reports $z = 0.145$ from Bauer+ (2000). However, it is not possible to find that spectrum in order to understand how they estimated z and no specific notes are available in their paper.
J0109.3 + 2401	GB6 J0109 + 2400	17.3111	+24.0096	0.493	SDSS	bcu	BLLAC	0	-
J0110.0 − 4019	RBS 158	17.4858	−40.3475	0.313	Fischer+ (1998)	bll	BLLAC	0	-
J0110.2 + 4151	6C B010709.9 + 413321	17.5201	+41.8308	0.0960	Laurent-Muehleisen+ (1998)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0110.7 − 1254	1RXS J011050.0 − 125455	17.7083	−12.9177	0.234	Fischer+ (1998)	bll	BLLAC	1	-
J0111.4 + 0534	1RXS J011130.5 + 053612	17.8758	+5.6076	0.347	Nass+ (1996)	bll	BLLAC	0	SDSS
J0111.5 − 2546	NVSS J011130 − 254531	17.8781	−25.7587	1.47	Table A2	bcu	UNCL	1	-
J0112.0 − 6634	PKS 0110 − 668	18.0788	−66.5792	1.19	Titov+ (2011)	fsrq	FSRQ	0	-
J0112.1 + 2245	S2 0109 + 22	18.0243	+22.7441	0.265	Healey+ (2008)	BLL	BLLAC	0	This result was challenged by Paiano+ (2008), who reported a featureless spectrum. However, Paiano reported $R = 14.8$, brighter than $R = 15.5$ reported by Healey. It is likely that jet activity has hidden the weak features observed by the latter. The galaxy is 15″ far from S2 0109 + 22 reported by Paiano, with redshift similar to Healey's, is likely to be in the same cluster, but it has $R = 18.3$. Even it falls in the slit, it cannot contaminate the spectrum of S2 0109 + 22 (3 mag difference). The conclusions of Paiano are challenged by their own Figure 5 : they wrote that the Ca H&K break can disappear for $z > 0.40$, but in that case R would have been 19.4, while they reported $R = 14.8$. Therefore, it is likely that they did not observe the calcium break simply because of an increased jet activity, while Healey observed the weak features because the object was in low optical state.
J0112.1 − 0321	TXS 0110 − 037	18.1631	−3.4786	0.772	SDSS	fsrq	FSRQ	0	-
J0112.6 − 3158	RX J011232.8 − 320140	18.1365	−32.0284	0.480	Chang+ (2019)	bll	BLLAC	1	-
J0112.8 + 3208	4C +31.03	18.2097	+32.1382	0.603	Wills & Wills (1976)	fsrq	FSRQ	0	-
J0112.8 − 7506	2MASS J01123146 − 7506179	18.1307	−75.1050	0.3	Table A2	bll	UNCL	1	-
J0113.1 − 3553	PMN J0113 − 3551	18.3161	−35.8634	1.22	Healey+ (2008)	fsrq	FSRQ	0	-
J0113.4 + 4948	S4 0110 + 49	18.3625	+49.8067	0.389	Henstock+ (1997)	fsrq	FSRQ	0	-
J0113.7 + 0225	UGC 773	18.4298	+2.3715	0.0470	Wills & Wills (1976)	bll	BLLAC	0	-
J0114.8 + 1326	GB6 J0114 + 1325	18.7199	+13.4271	0.583	Stadnik & Romani (2014)	bll	BLLAC	1	-
J0114.9 − 3400	1RXS J011501.3 − 340008	18.7572	−34.0076	0.482	Piranomonte+ (2007)	bll	BLLAC	0	-
J0115.1 + 2622	1RXS J011451.8 + 262337	18.7143	+26.3893	1.15	Table A2	bcu	BLLAC	1	SDSS
J0115.1 − 0129	PKS 0112 − 017	18.8212	−1.4513	1.37	SDSS	fsrq	FSRQ	0	-
J0115.6 + 0356	PMN J0115 + 0356	18.9188	+3.9454	0.483	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0115.8 + 2519	RX J0115.7 + 2519	18.9423	+25.3315	0.376	SDSS	bll	BLLAC	0	-
J0116.0 − 1136	PKS 0113 − 118	19.0522	−11.6043	0.671	Wright+ (1983)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0116.0 − 2745	1RXS J011555.6 − 274428	18.9811	−27.7422	0.432	Table A2	bll	BLLAC	1	Croom+ (2004)
J0116.2 − 6153	SUMSS J011619 − 615343	19.0817	−61.8954	0.169	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0116.5 − 2812	1RXS J011637.7 − 281146	19.1544	−28.1964	0.296	Table A2	bll	BLLAC	1	Arsioli+ (2015)
J0116.5 − 3046	PKS 0113 − 310	18.9438	−30.8221	1.41	Croom+ (2004)	fsrq	FSRQ	0	-
J0117.5 − 2442	1RXS J011746.6 − 244329	19.4458	−24.7258	0.279	Piranomonte+ (2007)	bll	BLLAC	0	-
J0117.8 − 2109	PKS 0115 − 214	19.4533	−21.1852	1.49	Healey+ (2008)	fsrq	FSRQ	0	-
J0118.7 − 0848	AT20G J011844 − 085058	19.6841	−8.8497	1.64	Table A2	bcu	UNCL	1	-
J0118.9 − 2141	PKS 0116 − 219	19.7386	−21.6917	1.16	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0119.0 − 1458	1RXS J011905.4 − 145906	19.7692	−14.9830	0.187	Table A2	bll	BLLAC	1	6dF
J0119.4 − 5354	PKS 0117 − 542	19.9602	−53.9550	0.639	Table A2	bcu	UNCL	1	-
J0119.6 + 4158	2MASX J01200274 + 4200139	20.0115	+42.0039	0.109	de Menezes+ (2020)	bll	BLLAC	0	-
J0119.9 + 4053	CRATES J012018 + 405314	20.0802	+40.8914	1.19	Table A2	bcu	UNCL	1	-
J0120.4 − 2701	PKS 0118 − 272	20.1319	−27.0235	0.408	Table A2	bll	BLLAC	1	Falomo (1989)
J0121.7 + 5153	2MASS J01213367 + 5155520	20.3905	+51.9310	0.839	Table A2	bcu	UNCL	1	-
J0121.8 − 3916	NVSS J012152 − 391547	20.4696	−39.2623	0.390	Peña-Herazo+ (2017)	bcu	BLLAC	0	-
J0122.1 − 3004	1RXS J012203.6 − 300507	20.5150	−30.0854	0.567	Table A2	bcu	UNCL	1	-
J0123.1 + 3421	1ES 0120 + 340	20.7860	+34.3469	0.272	Perlman+ (1996)	bll	BLLAC	0	-
J0123.7 − 2311	1RXS J012338.2 − 231100	20.9098	−23.1830	0.404	Schwope+ (2000)	bll	BLLAC	0	-
J0124.8 − 0625	PMN J0124 − 0624	21.2104	−6.4169	2.12	Shaw+ (2013)	bll	BLLAC	0	-
J0125.3 − 2548	PKS 0122 − 260	21.3285	−25.8179	1.24	Table A2	bll	BLLAC	1	Titov+ (2011)
J0125.4 + 3200	MG3 J012541 + 3152	21.4293	+31.8873	1.26	Table A2	bcu	UNCL	1	-
J0125.7 − 0015	PKS 0122 − 005	21.3215	−0.3080	2.28	MacAlpine & Feldman (1982)	fsrq	FSRQ	0	SDSS
J0126.0 − 2221	PKS 0123 − 226	21.5625	−22.3760	0.717	Baker+ (1999)	fsrq	FSRQ	0	-
J0126.5 − 1553	WISEA J012708.49 − 155554.1	21.7854	−15.9317	0.988	Table A2	bcu	UNCL	1	-
J0127.1 + 3310	NVSS J012656 + 330727	21.7383	+33.1250	0.524	Table A2	bll	BLLAC	1	Piranomonte+ (2007)
J0127.2 + 0324	NVSS J012713 + 032259	21.8081	+3.3835	0.284	Table A2	bll	BLLAC	1	Marchesi+ (2018)
J0127.2 − 0819	PMN J0127 − 0821	21.8180	−8.3580	0.419	Table A2	bll	BLLAC	1	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0127.4 − 4813	PMN J0127 − 4813	21.8118	−48.2256	0.866	Table A2	bcu	UNCL	1	-
J0127.9 + 4857	GB6 J0128 + 4901	22.0336	+49.0183	0.0670	Marcha et al. (1996)	bll	AMB	0	Rather strange object, a hybrid between BL Lac object and FRI, according to Marcha+ (1996) and Jackson+Marcha (1999). The optical spectrum shows Hα+[NII] and [OIII] lines, but not Hβ, suggesting the presence of partial covering, and hence a large viewing angle. LAT spectrum is rather soft ($\Gamma \sim 2.6$) favoring the MIS classification, rather than BLLAC. Lister classified it as radio galaxy in their MOJAVE project. Antón+Browne (2005) reported a brightness temperature at 5 GHz of $\sim 1.5 \times 10^9$ K.
J0128.5 + 4440	GB6 J0128 + 4439	22.1722	+44.6550	0.228	Marlow+ (2000)	fsrq	FSRQ	0	-
J0129.7 + 3436	TXS 0126 + 343	22.4311	+34.6163	0.690	Table A2	bcu	AMB	1	SDSS inconclusive. Radio morphology from Douglas+ (1996) is symmetric double with lobes, but the TGSS indicates a point-source. The radio spectrum from SIMBAD/Specfind is steep, but the TGSS-NVSS slope is inverted.
J0129.8 + 1440	4C +14.06	22.4806	+14.7800	1.63	SDSS	fsrq	FSRQ	0	-
J0130.6 + 1844	MG1 J013030 + 1843	22.6277	+18.7227	0.768	Table A2	bcu	BLLAC	1	SDSS
J0132.7 − 0804	PKS 0130 − 083	23.1714	−8.0680	0.149	Bauer+ (2000)	bcu	SEY	0	Bauer+ also classified it as Sy 1.5.
J0132.7 − 1654	PKS 0130 − 17	23.1812	−16.9135	1.02	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0132.8 + 4324	B3 0129 + 431	23.1839	+43.4257	1.19	Table A2	bcu	BLLAC	1	Henstock+ (1997)
J0132.8 − 4413	SUMSS J013306 − 441422	23.2765	−44.2393	0.151	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0133.1 − 5201	PKS 0131 − 522	23.2740	−52.0011	0.925	Marchesini+ (2019)	bcu	FSRQ	0	Johnston+ (1995) reported $z = 0.02$ of unknown origin.
J0133.2 − 4533	1RXS J013308.8 − 453528	23.2887	−45.5900	0.682	Table A2	bcu	UNCL	1	-
J0134.3 − 3842	PMN J0134 − 3843	23.6335	−38.7259	2.14	Iovino+ (1996)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0134.5 + 2637	RX J0134.4 + 2638	23.6175	+26.6453	0.571	Marchesi+ (2018)	fsrq	CLAGN	0	This source is rather intriguing and would deserve further studies. Shaw+ (2013) and Paiano+ (2020) reported featureless spectra and classified it as BL Lac object, with lower limits for z ($z > 0.15$ for Paiano; she also suggested that the MgII line reported by Marchesi is an artifact). However, Marchesi+ (2018) found a prominent emission line at 4400 Å, which is identified as Mg II. Therefore, they measured $z = 0.571$ and classified the source as FSRQ. The SDSS spectrum is featureless. The instruments used by Shaw and Paiano started from 4150 Å, while Marchesi and SDSS started from 3500 Å. The observations dates are: 14 October 2010, Shaw; 2 February 2015, SDSS; 10 October 2017, Marchesi; 3 December 2017, Paiano. The variability expected from a jetted AGN can explain differences in spectra from observations separated by years. Even the two months of separation from Marchesi and Paiano observations could be still well explained in terms of source variability. In addition, it is worth noting that the expected feature at 4400 Å is close to the lower wavelength boundary of the instrument used by Paiano, although the EW measured by Marchesi (EW = 64 Å) would make it measurable even with low instrument performance. Last, but not least, the other spectra collected on the same night by Marchesi did not record any signal on the same wavelength. Anyway, this source deserves a monitoring campaign. It might be a case similar to PMN J2345 − 1555.
J0135.1 + 0255	1RXS J013506.7 + 025558	23.7793	+2.9285	0.372	SDSS	bcu	BLLAC	0	-
J0136.5 + 3906	B3 0133 + 388	24.1358	+39.0998	-	-	bll	BLLAC	2	Featureless, the latest observation was done by Paiano+ (2017). SIMBAD reported $z = 0.75$ from Neronov+ (2015), but it seems to be the lower limit measured by Shaw+ (2013).
J0137.0 + 4751	OC 457	24.2441	+47.8581	0.859	Lawrence+ (1986)	fsrq	FSRQ	0	-
J0137.6 − 2430	PKS 0135 − 247	24.4098	−24.5150	0.837	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0138.0 + 2247	GB6 J0138 + 2248	24.5048	+22.8024	0.715	Table A2	bll	BLLAC	1	SDSS
J0138.5 − 4613	PMN J0138 − 4614	24.6418	−46.2376	0.0901	Jones+ (2009)	bcu	BLLAC	0	-
J0139.0 + 2601	WISE J013859.14 + 260015.7	24.7464	+26.0044	0.347	SDSS	bll	BLLAC	0	-
J0140.6 + 8736	WN B0126.6 + 8722	24.8016	+87.6327	0.777	Table A2	bcu	UNCL	1	-
J0140.6 − 0758	RX J0140.7 − 0758	25.1704	−7.9803	0.300	Table A2	bll	BLLAC	1	Sbarufatti+ (2009)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0141.4 − 0928	PKS 0139 − 09	25.3576	−9.4788	0.733	Stocke+Rector (1997)	bll	BLLAC	0	Stocke+Rector (1997) reported an absorption line MgII at $z = 0.5$, and two weak emission lines (MgII, [OII]) at $z = 0.733$. This value is confirmed by Shaw+ (2013), but not by Paiano+ (2020), likely due to jet activity. SDSS inconclusive.
J0142.7 − 0543	PKS 0140 − 059	25.6620	−5.7338	0.377	Table A2	bll	BLLAC	1	Landoni+ (2013)
J0143.1 − 3622	PMN J0143 − 3623	25.7865	−36.3829	0.865	Table A2	bcu	UNCL	1	-
J0143.5 − 3156	PKS 0140 − 322	25.7922	−32.0157	0.375	Croom+ (2004)	bcu	FSRQ	0	See also Londish+ (2007) for the classification as Type 1 AGN.
J0143.7 − 5846	SUMSS J014347 − 584550	25.9476	−58.7643	0.027	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0144.6 + 2705	TXS 0141 + 268	26.1398	+27.0842	0.675	Table A2	bll	BLLAC	1	Shaw+ (2009)
J0145.0 − 2732	PKS 0142 − 278	26.2641	−27.5595	1.15	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0145.9 + 2319	TXS 0143 + 230	26.4704	+23.3220	0.922	Table A2	bcu	BLLAC	1	SDSS
J0146.0 − 6746	SUMSS J014554 − 674646	26.4784	−67.7803	0.229	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0146.3 + 4606	B3 0143 + 458	26.6105	+46.1050	0.592	Table A2	bcu	UNCL	1	-
J0146.9 − 5202	PKS 0144 − 522	26.7024	−52.0427	0.0981	Jones+ (2009)	bll	BLLAC	0	-
J0148.6 + 0127	PMN J0148 + 0129	27.1408	+1.4837	0.940	Shaw+ (2013)	bll	BLLAC	0	-
J0149.6 − 0734	PMN J0149 − 0733	27.3918	−7.5548	0.722	Table A2	bcu	UNCL	1	-
J0150.6 − 5448	PMN J0150 − 5450	27.6856	−54.8347	0.188	Table A2	bcu	UNCL	1	-
J0151.0 + 0539	PMN J0151 + 0540	27.7577	+5.6761	0.609	Table A2	bcu	BLLAC	1	SDSS
J0151.3 + 8601	WN B0140.0 + 8546	27.3969	+86.0210	0.150	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J0151.4 − 3607	PMN J0151 − 3605	27.8643	−36.1049	0.198	Table A2	bcu	UNCL	1	The 3FGL (Ackermann+ 2015) reported $z = 0.681$, but there is no information on the origin of this measurement. No references on optical spectra are available neither on SIMBAD nor on NED.
J0152.2 + 2206	PKS 0149 + 21	28.0752	+22.1188	1.32	Wampler+ (1984)	fsrq	FSRQ	0	SDSS
J0152.2 + 3714	B2 0149 + 37	28.0509	+37.2682	0.55	Table A2	bcu	UNCL	1	The 3FGL (Ackermann+ 2015) gives $z = 0.761$, but there are no information about the origin of this measurement. No other published papers with any spectroscopic redshift measurement.
J0152.6 + 0147	PMN J0152 + 0146	28.1650	+1.7882	0.080	Laurent-Muehleisen+ (1998)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0153.0 + 7517	1RXS J015308.4 + 751756	28.2808	+75.2953	2.35	Table A2	bll	UNCL	1	-
J0153.5 − 5107	PKS 0152 − 513	28.5821	−51.1310	1.58	Eracleous+Halpern (1994)	fsrq	FSRQ	0	Savage+Bolton (1979) reported $z = 0.44$, but without information.
J0153.9 + 0823	GB6 J0154 + 0823	28.5115	+8.3975	0.681	Shaw+ (2013)	bll	BLLAC	0	-
J0154.3 − 0236	TXS 0151 − 028	28.5950	−2.5816	0.0823	Jones+ (2009)	bcu	BLLAC	0	-
J0155.0 + 4433	GB6 J0154 + 4433	28.7269	+44.5605	0.856	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0155.4 − 0625	PMN J0155 − 0621	28.9721	−6.3595	0.437	Table A2	bcu	UNCL	1	-
J0156.1 + 1502	RX J0156.0 + 1502	29.0012	+15.0369	0.08	Nass+ (1996)	bcu	BLLAC	1	-
J0156.5 + 3914	MG4 J015630 + 3913	29.1309	+39.2419	0.446	Peña-Herazo+ (2021)	bcu	FSRQ	0	LAMOST
J0156.6 − 1758	PMN J0156 − 1800	29.1531	−18.0172	0.261	Table A2	bcu	UNCL	1	-
J0156.8 − 4744	2MASS J01564603 − 4744174	29.1918	−47.7381	0.117	Table A2	bll	UNCL	1	-
J0156.9 + 4648	MG4 J015651 + 4648	29.2274	46.8085	0.972	Table A2	bcu	UNCL	1	-
J0156.9 − 5301	1RXS J015658.6 − 530208	29.2417	−53.0333	0.304	Goldoni+ (2021)	bll	BLLAC	0	-
J0157.7 − 4614	PMN J0157 − 4614	29.4630	−46.2398	2.29	Shaw+ (2012)	fsrq	FSRQ	0	-
J0158.5 − 3932	PMN J0158 − 3932	29.6588	−39.5344	0.233	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0158.8 + 0101	GB6 J0158 + 0101	29.7199	+1.0258	0.454	Paiano+ (2019)	fsrq	BLLAC	0	-
J0159.3 − 4523	PMN J0159 − 4515	29.7780	−45.2606	0.812	Table A2	bcu	UNCL	1	-
J0159.5 + 1046	RX J0159.5 + 1047	29.8933	+10.7849	0.195	Shaw+ (2013)	bll	BLLAC	0	-
J0159.7 − 2740	PMN J0159 − 2739	29.9306	−27.6773	0.453	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0200.3 − 4109	1RXS J020021.0 − 410936	+30.0875	−41.1601	0.0539	Jones+ (2009)	bcu	BLLAC	0	-
J0200.6 − 6637	PMN J0201 − 6638	30.2823	−66.6369	1.28	Titov+ (2017)	bcu	FSRQ	0	-
J0201.1 + 0036	MS 0158.5 + 0019	30.2757	+0.5667	0.298	Stocke+ (1991)	bll	BLLAC	0	SDSS
J0201.1 − 4347	GALEXASC J020110.83 − 434654.8	30.2955	−43.7820	0.610	Table A2	bcu	UNCL	1	-
J0202.4 + 0849	TXS 0159 + 085	30.6101	+8.8205	0.629	Shaw+ (2012)	fsrq	BLLAC	0	-
J0202.6 − 0258	WISE J020239.94 − 030207.9	30.6664	−3.0355	1.35	Becker+ (2001)	fsrq	FSRQ	0	SDSS
J0202.7 + 4204	B3 0159 + 418	30.6819	+42.0879	0.94	Meisner+Romani (2010)	bll	BLLAC	1	-
J0202.9 − 0225	RX J0202.9 − 0223	30.7176	−2.3891	0.142	Table A2	bcu	UNCL	1	-
J0203.6 + 7233	S5 0159 + 723	30.8891	+72.5482	-	-	bll	BLLAC	2	Shaw+ (2013)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0203.7 + 3042	NVSS J020344 + 304238	30.9345	+30.7105	0.761	SDSS	bll	FSRQ	0	-
J0204.0 − 3334	1RXS J020413.6 − 333345	31.0533	−33.5614	0.617	Piranomonte+ (2007)	bll	BLLAC	0	-
J0204.1 − 2919	PMN J0204 − 2923	31.0440	−29.3845	0.740	Table A2	bcu	UNCL	1	-
J0204.3 + 2417	B2 0201 + 24	31.0898	+24.2974	0.210	de Menezes+ (2020)	bcu	BLLAC	0	-
J0204.8 + 1513	4C +15.05	31.2101	+15.2364	0.405	Perlman+ (1998)	bcu	FSRQ	0	Classified as CSS quasar, An+ (2016), but SPECFIND gives a rather flat spectrum $\alpha \sim -0.1$. The value of redshift was challenged by Jones+ (2018), which referred to Stickel+ (1996). Stickel reported $z = 0.833$ on the basis of two lines identified as [OII] and [NeII]. The same lines were identified by Perlman as Hβ and [OIII], together with other lines in the spectrum (Hα). Additionally, Olguín Iglesias+ (2016) supported the Perlman's redshift on the basis of the study of the host galaxy.
J0205.0 − 1700	PKS 0202 − 17	31.2403	−17.0222	1.74	Kinman+ (1967)	fsrq	FSRQ	0	The first value is reported by Kinman+ (1967), who in turn referred to a spectrum taken by Arp with 200-inches at Mt Palomar. However, neither data nor value are reported. Anyway, the value of redshift has been confirmed later by many authors (e.g., 6dF).
J0205.2 + 3212	B2 0202 + 31	31.2705	+32.2084	1.47	Burbidge (1970)	fsrq	FSRQ	0	-
J0206.4 − 1151	PMN J0206 − 1150	31.6087	−11.8444	1.66	Healey+ (2008)	fsrq	FSRQ	0	-
J0206.8 − 5744	SUMSS J020640 − 574948	31.6704	−57.8303	0.188	Table A2	bcu	UNCL	1	-
J0207.4 − 3855	PKS 0205 − 391	31.8150	−38.9509	0.254	Machalski+Condon (1999)	bcu	BLLAC	0	Classified as BLLAC by Peña-Herazo+ (2021), who also confirmed the redshift.
J0207.5 − 1049	PMN J0207 − 1047	31.9122	−10.7968	0.582	Table A2	bcu	UNCL	1	-
J0207.5 − 2402	NVSS J020733 − 240202	31.8892	−24.0339	0.595	Table A2	bcu	UNCL	1	-
J0208.3 − 6838	PKS 0206 − 688	31.9622	−68.6320	-	-	bll	BLLAC	2	Shaw+ (2013)
J0208.5 − 0046	PKS 0205 − 010	32.1098	−0.7956	0.684	Table A2	bll	BLLAC	1	SDSS
J0208.6 + 3523	MS 0205.7 + 3509	32.1590	+35.3869	0.351	Watson+ (2004)	bll	BLLAC	0	There was a debate about the redshift, because the early identification with a spiral host galaxy was wrong (first value of z in Stocke+ 1991; BL Lac off center of the spiral host in Stocke+ (1995), spiral in foreground, microlensing suggested). Falomo+ (1997) found a nebulosity coincident with the BL Lac object, which was identified as an elliptical galaxy and strengthened Stocke's value. Watson's value was derived from the detection of an MgII absorption doublet.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0209.3 + 4449	1RXS J020917.6 + 444951	32.3214	+44.8295	0.268	Table A2	bll	BLLAC	1	Bauer+ (2000)
J0209.3 − 5228	PMN J0209 − 5229	32.3401	−52.4897	0.211	Goldoni+ (2021)	bll	BLLAC	0	-
J0209.9 + 7229	S5 0205 + 722	32.4658	+72.4907	0.895	Vermeulen+ (1996)	bll	FSRQ	0	-
J0210.1 + 2518	GB6 J0210 + 2517	32.5106	+25.2905	0.276	Table A2	bcu	UNCL	1	-
J0210.5 − 1445	PKS 0207 − 149	32.5966	−14.7497	1.11	Table A2	bcu	UNCL	1	-
J0210.7 − 5101	PKS 0208 − 512	32.6925	−51.0172	1.00	Wilkes+ (1983)	FSRQ	FSRQ	0	-
J0211.1 − 0646	NVSS J021109 − 064551	32.7914	−6.7639	1.26	Table A2	bcu	UNCL	1	-
J0211.2 + 1051	MG1 J021114 + 1051	32.8049	+10.8597	0.200	Meisner+Romani (2010)	BLL	BLLAC	1	-
J0212.2 − 0219	RX J0212.3 − 0222	33.0703	−2.3655	0.169	SDSS	bcu	BLLAC	0	-
J0212.2 − 2559	PMN J0212 − 2558	33.1230	−25.9718	-	-	bcu	UNCL	3	-
J0212.4 − 3502	RBS 292	33.1271	−35.0584	0.393	Schwope+ (2000)	bll	BLLAC	0	-
J0212.8 − 2721	PMN J0212 − 2719	33.2302	−27.3052	0.565	Table A2	bcu	UNCL	1	-
J0212.9 + 2244	MG3 J021252 + 2246	33.2201	+22.7478	0.459	Shaw+ (2013)	bll	BLLAC	0	-
J0213.8 − 6949	2MASS J02135882 − 6951360	33.4996	−69.8583	0.3	Table A2	bcu	UNCL	1	-
J0214.1 − 4733	2MASS J02140989 − 4732357	33.5409	−47.5431	0.172	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0214.2 − 7025	PMN J0214 − 7027	33.5186	−70.4517	1.2	Table A2	bcu	UNCL	1	-
J0214.4 − 5822	PMN J0214 − 5822	33.5433	−58.3686	0.174	Table A2	bcu	UNCL	1	-
J0214.6 − 4333	1RXS J021439.0 − 433319	33.6625	−43.5553	0.450	Table A2	bcu	UNCL	1	-
J0214.8 − 6150	PKS 0212 − 620	33.5675	−61.8260	0.735	Table A2	bcu	UNCL	1	-
J0215.3 + 7555	WN B0210.3 + 7540	33.8246	+75.9147	0.107	Table A2	bcu	UNCL	1	-
J0215.9 + 0300	PMN J0215 + 0300	34.0019	+3.0033	0.408	Table A2	bcu	BLLAC	1	SDSS
J0216.5 + 2313	RBS 298	34.1337	+23.2473	0.288	Fischer+ (1998)	bll	BLLAC	0	-
J0216.6 − 1015	PMN J0216 − 1017	34.1620	−10.2842	0.737	Table A2	bcu	UNCL	1	-
J0216.8 + 0510	NVSS J021655 + 051018	34.2318	+5.1718	1.14	Table A2	bcu	BLLAC	1	SDSS
J0216.8 − 6635	RBS 300	34.2120	−66.6118	-	-	bll	BLLAC	2	Shaw+ (2013)
J0217.0 − 0821	PKS 0214 − 085	34.2611	−8.3479	0.607	Shaw+ (2012)	fsrq	AMB	0	SDSS spectrum is a bit noisy, with weak and narrow lines suggesting partial covering. Radio spectrum is flat; Gamma-ray spectrum is soft. Could be SEY or NLS1.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0217.2 + 0837	ZS 0214 + 083	34.3214	+8.6177	0.0850	Shaw+ (2013)	bll	BLLAC	0	Gorshkov+Konnikova (1983) earlier suggested a quasar classification and $z = 1.4$, but they themselves recognized it could be a spurious identification given the weakness of the lines.
J0217.4 + 7352	S5 0212 + 73	34.3784	+73.8257	2.37	Lawrence+ (1986)	fsrq	FSRQ	0	-
J0217.8 + 0144	PKS 0215 + 015	34.4540	+1.7471	1.72	Foltz+ (1987)	fsrq	CLAGN	0	Early detections suggested a BL Lac identification, with featureless spectrum and many absorption lines due to intervening systems. The first estimate of the redshift was by Blades+ (1985), who identified the Lyα forest. Then, Foltz+ (1987) detected two emission lines (SiIV, CIV), consistent with Blades' estimates. The equivalent width of CIV (18Å) points to a FSRQ classification, but also to a changing-look AGN. It is worth noting that the BL Lac-type spectrum was taken when the source was faint, while the FSRQ-type spectrum was observed when the source was bright. This seems to be due to a change in the accretion rate rather than to the jet activity.
J0218.9 + 3643	MG3 J021846 + 3641	34.7085	+36.6785	1.07	Table A2	bcu	UNCL	1	-
J0218.9 − 2305	PMN J0218 − 2307	34.6676	−23.1201	0.685	Table A2	bcu	UNCL	1	-
J0219.0 + 2443	87GB 021610.9 + 243205	34.7517	+24.7557	0.489	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J0219.1 − 1724	1RXS J021905.8 − 172503	34.7729	−17.4203	0.128	Wolter+ (1998)	bll	BLLAC	0	-
J0219.5 + 0724	GB6 J0219 + 0727	34.8570	+7.4596	0.934	Table A2	bll	BLLAC	1	SDSS
J0220.2 + 3246	CRATES J022048 + 324106	35.2002	+32.6851	1.62	Hook+ (1996)	fsrq	FSRQ	0	There is a typo in the counterpart name in the 4FGL: it is written CRATES J022048+324116, but it should be CRATES J022048 + 324106.
J0220.8 − 0841	RX J0220.8 − 0842	35.2019	−8.7140	0.525	Smith+ (2007)	bll	BLLAC	0	-
J0221.1 + 3556	B2 0218 + 357	35.2729	+35.9372	0.944	Cohen+ (2003)	FSRQ	FSRQ	0	Gravitationally lensed object by an object at $z = 0.68$. NED erroneously reports this latter value for z.
J0221.2 − 1312	TXS 0218 − 132	35.3012	−13.0465	0.850	Table A2	bcu	UNCL	1	-
J0221.5 + 2513	2MASS J02212698 + 2514338	35.3624	+25.2427	0.543	Table A2	bcu	UNCL	1	-
J0221.8 + 3730	GB6 J0222 + 3731	35.5644	+37.5210	0.923	Table A2	bcu	UNCL	1	-
J0222.0 − 1616	PKS 0219 − 164	35.5030	−16.2546	0.698	Wilkes+ (1986)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0222.6 + 4302	3C 66A	35.6650	+43.0355	0.340	Torres-Zafra+ (2018)	BLL	BLLAC	1	Long-standing debate on the value of z because all the taken spectra are almost featureless. Bu+ (2019) reported a hint of Lyα (2.2 σ with HST/COS) consistent with the expected redshift.
J0223.0 − 3447	PKS 0220 − 349	35.7350	−34.6913	1.49	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J0223.1 − 1117	1RXS J022314.6 − 111741	35.8094	−11.2940	0.518	Table A2	bll	BLLAC	1	Masetti+ (2013)
J0223.2 − 1653	PKS 0221 − 171	35.9324	−16.9438	1.01	Titov+ (2011)	fsrq	FSRQ	0	-
J0223.5 + 3912	B3 0220 + 390	35.8683	+39.2142	1.22	Table A2	bcu	UNCL	1	-
J0223.5 − 0928	PMN J0223 − 0925	35.9201	−9.4226	1.00	SDSS	bcu	FSRQ	0	-
J0224.0 − 1850	GALEXASC J022404.29 − 185029.9	36.0186	−18.8423	-	-	bcu	UNCL	3	-
J0224.0 − 7941	PMN J0223 − 7940	35.9125	−79.6706	-	-	bll	UNCL	3	-
J0224.2 + 0700	PKS 0221 + 067	36.1185	+6.9898	0.511	White+ (1988)	fsrq	NLS1	0	FWHM(Hβ) = 27Å$\sim$ 1100 km/s, and strong [OIII], flat radio spectrum, soft gamma-ray spectrum.
J0224.2 + 1616	NVSS J022411 + 161500	36.0493	+16.2495	0.887	Table A2	bcu	UNCL	1	-
J0224.9 + 1843	TXS 0222 + 185	36.2695	+18.7802	2.69	Schwope+ (2000)	fsrq	FSRQ	0	-
J0225.1 − 2604	PMN J0225 − 2603	36.2954	−26.0552	0.917	Table A2	bcu	UNCL	1	-
J0225.6 − 4502	PMN J0225 − 4503	36.4314	−45.0546	0.437	Table A2	bcu	UNCL	1	-
J0225.8 + 1310	NVSS J022551 + 131046	36.4639	+13.1796	0.466	Table A2	bcu	UNCL	1	-
J0226.3 − 1845	PKS 0224 − 189	36.6985	−18.7276	1.68	Titov+ (2017)	bcu	FSRQ	0	Warning: SIMBAD coordinates are wrong (difference $\sim 1.7'$).
J0226.5 + 0938	NVSS J022634 + 093843	36.6427	+9.6456	0.788	Table A2	fsrq	UNCL	1	-
J0226.5 − 4441	RBS 318	36.6620	−44.6896	0.380	Table A2	bll	BLLAC	1	Jones+ (2009)
J0226.6 − 0553	PMN J0226 − 0552	36.6668	−5.8774	0.013	Table A2	bcu	UNCL	1	-
J0226.7 + 2312	GB6 J0226 + 2311	36.6303	+23.1903	0.373	Table A2	bcu	UNCL	1	-
J0227.2 + 3928	B2 0224 + 39	36.7809	+39.5282	1.57	Vigotti+ (1997)	fsrq	FSRQ	0	-
J0227.3 + 0201	RX J0227.2 + 0201	36.8191	+2.0333	0.457	Sbarufatti+ (2005)	bll	BLLAC	0	-
J0227.8 + 2246	NVSS J022744 + 224834	36.9348	+22.8095	0.514	Table A2	bcu	UNCL	1	-
J0228.0 − 3026	PKS 0225 − 306	36.9189	−30.4343	0.303	Croom+ (2004)	fsrq	FSRQ	0	-
J0228.1 + 8208	WN B0220.3 + 8153	36.8925	+82.1088	-	-	bcu	UNCL	3	-
J0228.2 − 3102	PMN J0228 − 3102	37.0541	−31.0445	0.401	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0228.3 − 5547	PKS 0226 − 559	37.0900	−55.7676	2.46	Healey+ (2008)	fsrq	FSRQ	0	-
J0228.5 − 2234	NVSS J022832 − 223350	37.1337	−22.5642	0.734	Table A2	bcu	UNCL	1	-
J0229.5 − 3644	PKS 0227 − 369	37.3685	−36.7325	2.11	Hook+ (2003)	fsrq	FSRQ	0	-
J0230.8 + 4032	B3 0227 + 403	37.6905	+40.5481	1.02	Henstock+ (1997)	fsrq	FSRQ	0	-
J0231.2 − 4745	PMN J0231 − 4746	37.7992	−47.7699	0.765	Healey+ (2008)	fsrq	FSRQ	0	-
J0231.2 − 5754	PKS 0229 − 581	37.7886	−57.9183	0.0320	Fairall (1980)	bll	BLLAC	0	Host galaxy SB type with inner ring (Buta 1995).
J0231.8 + 1322	4C +13.14	37.9412	+13.3819	2.06	Schmidt (1968)	fsrq	FSRQ	0	-
J0232.5 − 1118	PMN J0232 − 1120	38.1746	−11.3390	0.209	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0232.8 + 2018	1ES 0229 + 200	38.2026	+20.2882	0.140	Schachter+ (1993)	bll	BLLAC	0	-
J0232.9 + 2608	B2 0230 + 25	38.2348	+26.1619	0.531	Table A2	bll	UNCL	1	-
J0233.0 + 3740	NVSS J023308 + 374201	38.2833	+37.7000	0.127	Table A2	bcu	UNCL	1	-
J0233.5 + 0654	TXS 0230 + 067	38.3749	+6.9240	0.225	Table A2	bcu	UNCL	1	-
J0233.9 + 8041	1RXS J023428.6 + 804341	38.6275	+80.7270	1.13	Table A2	bcu	UNCL	1	-
J0234.3 − 0628	SDSS J023410.30 − 062825.7	38.5428	−6.4738	0.687	Table A2	bll	BLLAC	1	Paiano+ (2019)
J0235.6 − 2939	PHL 1389	38.9030	−29.6454	1.55	Table A2	bll	UNCL	1	Croom+ (2004) found $z = 0$ (quality flag 11, high-quality spectrum, no more available) and classified it as a star. Additionally, Kilkenny+ (2016) classified it as B/sdB star. Could the γ-ray emission be due to a XRB with a neutron star? Arsioli+ (2015) suggest it could be a BL Lac object with $z > 0.66$.
J0236.8 − 6136	PKS 0235 − 618	39.2219	−61.6042	0.465	Healey+ (2008)	fsrq	FSRQ	0	-
J0237.6 + 0923	OD 58	39.4189	+9.3171	0.335	Table A2	bcu	UNCL	1	-
J0237.6 − 3602	RBS 334	39.3919	−36.0579	0.411	Pita+ (2014)	bll	BLLAC	0	-
J0237.7 + 0206	PKS 0235 + 017	39.4082	+2.1285	0.0216	Huchra+ (1983)	rdg	MIS	0	Steep radio spectrum. Condon+ (2002) reported "very extended bent-tail radio source".
J0237.8 + 2848	4C +28.07	39.4684	+28.8025	1.21	Shaw+ (2012)	FSRQ	FSRQ	0	The first reported measurement of the redshift seems to be Baldwin+ (1978), but I cannot find the pdf on the web to confirm it.
J0238.1 − 3905	1RXS J023800.5 − 390505	39.5026	−39.0846	0.177	Table A2	bll	UNCL	1	The 3FGL (Ackermann+ 2015) reported $z = 0.2$, but without any reference or information on the origin of this measurement.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0238.2 + 1531	CRATES J023819 + 153323	39.5829	+15.5563	0.983	Table A2	bcu	UNCL	1	-
J0238.4 − 3116	1RXS J023832.6 − 311658	39.6353	−31.2828	0.232	Shaw+ (2013)	bll	BLLAC	0	-
J0238.6 + 1637	PKS 0235 + 164	39.6622	+16.6165	0.940	Cohen+ (1987)	BLL	BLLAC	0	-
J0239.5 + 1326	GB6 J0239 + 1327	39.8635	+13.4607	0.595	Table A2	bcu	UNCL	1	-
J0239.5 − 1353	CRATES J023939.13 − 135409.6	39.9130	−13.9026	1.27	Table A2	bcu	UNCL	1	-
J0239.7 + 0415	PKS 0237 + 040	39.9636	+4.2726	0.976	Schmidt (1977)	fsrq	FSRQ	0	SDSS
J0240.8 − 3401	NVSS J024047 − 340018	40.1987	−34.0063	0.157	Table A2	bcu	UNCL	1	-
J0241.0 − 0505	PKS 0238 − 052	40.2341	−5.0784	0.536	Table A2	bll	UNCL	1	-
J0241.9 − 1603	1RXS J024151.6 − 160339	40.4642	−16.0593	0.455	Table A2	bcu	UNCL	1	-
J0242.3 + 1102	OD 166	40.6215	+11.0169	2.68	Afanas'ev+ (2005)	fsrq	FSRQ	0	-
J0242.6 + 1735	NVSS J024248 + 173700	40.7009	+17.6168	1.40	Table A2	bcu	UNCL	1	-
J0242.9 + 0045	FIRST J024302.9 + 004627	40.7622	+0.7742	0.409	Becker+ (2001)	bll	BLLAC	0	SDSS
J0243.2 − 0550	PKS 0240 − 060	40.8020	−5.8487	1.80	Baldwin+ (1981)	fsrq	FSRQ	0	-
J0243.4 + 7119	S5 0238 + 711	40.8787	+71.3383	0.730	Table A2	bll	BLLAC	1	(Paiano+ 2017)
J0243.7 + 0321	PKS 0241 + 031	40.9410	+3.3338	0.635	Table A2	bcu	UNCL	1	-
J0244.6 − 5819	RBS 351	41.1679	−58.3318	0.265	Schwope+ (2000)	bll	BLLAC	0	-
J0244.7 + 1316	GB6 J0244 + 1320	41.1904	+13.3353	0.985	Paiano+ (2021)	bcu	FSRQ	0	-
J0245.1 − 0257	PMN J0245 − 0255	41.3318	−2.9412	0.373	Table A2	bll	BLLAC	1	SDSS
J0245.4 + 2408	B2 0242 + 23	41.3202	+24.0931	2.25	Shaw+ (2012)	fsrq	FSRQ	0	-
J0245.4 − 5950	PMN J0244 − 5948	41.2207	−59.8016	0.512	Table A2	bcu	UNCL	1	-
J0245.5 − 4502	PKS 0244 − 452	41.4755	−44.9943	0.283	Maza+ (1995)	fsrq	FSRQ	0	6dF
J0245.9 − 4650	PKS 0244 − 470	41.5005	−46.8548	1.38	Mahony+ (2011)	fsrq	FSRQ	0	-
J0246.6 − 3348	TXS 0244 − 340	41.6945	−33.8552	-	-	bcu	UNCL	3	-
J0248.0 + 2232	1RXS J024800.1 + 223136	42.0004	+22.5268	0.982	Table A2	bcu	UNCL	1	-
J0250.2 − 8224	PMN J0251 − 8226	42.7885	−82.4415	0.359	Table A2	bcu	UNCL	1	-
J0250.6 + 1712	RGB J0250 + 172	42.6582	+17.2025	0.243	Archambault+ (2016)	bll	BLLAC	0	-
J0250.6 + 8435	WN B0239.6 + 8423	42.4514	+84.5992	0.625	Table A2	bcu	UNCL	1	-
J0251.5 − 5958	PKS 0250 − 602	42.8594	−60.0017	1.37	Healey+ (2008)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0252.8 − 2219	PKS 0250 − 225	43.1998	−22.3237	1.42	Healey+ (2008)	fsrq	FSRQ	0	-
J0252.9 + 3834	B2 0249 + 38	43.2870	+38.5903	1.12	Henstock+ (1997)	fsrq	FSRQ	0	-
J0253.2 − 0124	FBQS J0253 − 0124	43.3150	−1.4015	0.535	Table A2	bll	BLLAC	1	SDSS
J0253.2 − 5441	PKS 0252 − 549	43.3716	−54.6976	0.537	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0253.5 + 3216	MG3 J025334 + 3217	43.3902	+32.2891	0.859	Ricci+ (2015)	fsrq	FSRQ	0	-
J0255.8 + 0534	PMN J0255 + 0533	43.9563	+5.5653	0.580	Table A2	bll	BLLAC	1	SDSS
J0256.3 + 0334	PKS B0253 + 033	44.1173	+3.5588	0.971	Table A2	bll	UNCL	1	-
J0257.0 + 3358	GB6 J0257 + 3357	44.2830	+33.9584	0.373	Table A2	bcu	UNCL	1	-
J0257.9 − 1215	PMN J0257 − 1211	44.4209	−12.2004	1.39	Shaw+ (2012)	fsrq	FSRQ	0	-
J0258.1 + 2030	MG3 J025805 + 2029	44.5305	+20.5004	0.484	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0259.4 + 0308	1RXS J025923.7 + 030736	44.8487	+3.1268	0.275	Table A2	bcu	UNCL	1	-
J0259.4 + 0746	PKS 0256 + 075	44.8628	+7.7943	0.893	Stickel+ (1989)	fsrq	FSRQ	0	-
J0259.5 + 1924	TXS 0256 + 192	44.8736	+19.4290	0.545	Caccianiga+ (2000)	fsrq	FSRQ	0	-
J0259.5 − 1705	NVSS J025933 − 170540	44.8892	−17.0939	0.629	Table A2	bcu	UNCL	1	-
J0301.0 − 1652	PMN J0301 − 1652	45.3193	−16.8792	0.278	Marchesini+ (2019)	bcu	BLLAC	0	-
J0301.4 − 3124	PKS 0259 − 316	45.3177	−31.4377	0.313	Peña-Herazo+ (2021)	bcu	FSRQ	0	-
J0301.6 − 7155	PKS 0301 − 721	45.4102	−71.9429	0.823	Titov+ (2013)	fsrq	FSRQ	0	-
J0301.9 − 2731	NVSS J030158 − 272754	45.4917	−27.4653	0.481	Table A2	bcu	UNCL	1	-
J0303.2 + 3149	B2 0259 + 31	45.7565	+31.8459	0.451	Table A2	bcu	UNCL	1	-
J0303.3 + 0555	GB6 J0303 + 0554	45.8758	+5.9084	0.196	Fischer+ (1998)	bll	BLLAC	0	-
J0303.3 − 7913	PMN J0303 − 7914	45.8371	−79.2490	1.11	Healey+ (2008)	fsrq	FSRQ	0	-
J0303.4 − 2407	PKS 0301 − 243	45.8604	−24.1198	0.263	Pesce+ (1995)	BLL	BLLAC	0	-
J0303.4 − 5232	AT20G J030328 − 523433	45.8675	−52.5759	0.829	Table A2	bcu	UNCL	1	-
J0303.6 − 6211	PKS 0302 − 623	45.9610	−62.1904	1.35	Healey+ (2008)	fsrq	FSRQ	0	-
J0304.4 − 2833	RBS 385	46.0680	−28.5384	0.597	Table A2	bll	BLLAC	1	Arsioli+ (2015)
J0304.5 + 3349	4C +33.06	46.1723	+33.8121	0.475	Table A2	bcu	UNCL	1	-
J0304.5 − 0054	RX J0304.5 − 0054	46.1415	−0.9013	0.511	SDSS	bll	BLLAC	0	Brinkmann+ (2000) reported $z = 0.33$, but there are neither the spectrum nor any explanation on how this value was obtained.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0304.9 − 0606	PMN J0304 − 0608	46.2523	−6.1282	0.880	Table A2	bll	UNCL	1	-
J0305.1 − 1608	PKS 0302 − 16	46.3128	−16.1380	0.312	Paiano+ (2017)	bll	BLLAC	0	-
J0307.8 − 0419	LEDA 095522	46.9355	−4.3192	0.0289	Wegner+ (1999)	bcu	BLLAC	0	-
J0308.1 − 2852	2MASS J03081686 − 2851054	47.0702	−28.8514	0.170	Table A2	bcu	UNCL	1	-
J0308.4 + 0407	NGC 1218	47.1093	+4.1109	0.0286	Schmidt (1965)	rdg	MIS	0	Classified as LERG, FRI by Balmaverde+ (2021). S0 host galaxy.
J0309.0 + 1029	PKS 0306 + 102	47.2651	+10.4879	0.863	Veron (1994)	fsrq	FSRQ	0	-
J0309.4 − 4000	PKS 0307 − 402	47.3042	−40.0308	0.193	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0309.7 − 0745	NVSS J030943 − 074427	47.4302	−7.7410	0.199	Table A2	bll	BLLAC	1	Massaro+ (2015)
J0309.9 − 6058	PKS 0308 − 611	47.4837	−60.9775	1.48	Healey+ (2008)	fsrq	FSRQ	0	-
J0310.6 − 5017	1RXS J031036.0 − 501615	47.6447	−50.2753	0.239	Table A2	bll	UNCL	1	-
J0310.8 − 1041	PMN J0310 − 1037	47.6421	−10.6208	0.177	Table A2	bcu	UNCL	1	-
J0310.9 + 3815	B3 0307 + 380	47.7078	+38.2483	0.816	Vermeulen+Taylor (1995)	fsrq	SEY	0	Redshift confirmed by SDSS. Hβ narrow (FWHM = 15Å $\sim$ 510 km/s), flat radio spectrum, soft gamma-ray spectrum. There is an error in the Vizier version of Shaw+ (2012): the coordinates of B3 0307+380 are associated with the 1FGL J0342.2 + 3859.
J0311.5 − 4402	GALEXASC J031103.24 − 440227.8	47.7636	−44.0411	0.380	Table A2	bcu	UNCL	1	-
J0311.6 + 4134	B3 0308 + 413	47.8856	+41.5735	0.558	Table A2	bcu	UNCL	1	-
J0312.5 − 2221	NVSS J031235 − 222118	48.1488	−22.3548	0.399	Table A2	bll	UNCL	1	-
J0312.8 + 0134	PKS 0310 + 013	48.1817	+1.5549	0.664	Strittmatter+ (1974)	fsrq	FSRQ	0	-
J0312.9 + 3614	V Zw 326	48.2095	+36.2554	0.0715	Sargent (1970)	bll	BLLAC	0	-
J0312.9 + 4119	B3 0309 + 411B	48.2582	+41.3337	0.134	de Bruyn (1989)	rdg	MIS	0	Broad-Line Radio Galaxy, FRII (de Bruyn 1989).
J0313.0 + 0229	TXS 0310 + 022	48.3059	+2.4765	0.994	Pursimo+ (2013)	bcu	FSRQ	0	-
J0314.3 + 0620	NVSS J031423 + 061955	48.5997	+6.3324	0.143	Table A2	bll	BLLAC	1	Arsioli+ (2015) classified it as BL Lac Object with $z = 0.62$ with an uncertainty flag, but there are no information about this flag.
J0314.3 − 5103	PMN J0314 − 5104	48.6071	−51.0754	0.258	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0314.6 − 6549	PKS 0313 − 660	48.5935	−65.8069	0.636	Perlman+ (1998)	fsrq	FSRQ	0	-
J0315.9 − 1033	PKS 0313 − 107	48.9870	−10.5276	1.57	Shaw+ (2012)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0316.0 − 5626	1RXS J031613.4 − 562545	49.0558	−56.4293	0.435	Table A2	bcu	UNCL	1	-
J0316.2 + 0905	GB6 J0316 + 0904	49.0531	+9.0787	0.372	Stadnik+Romani (2014)	bll	BLLAC	1	-
J0316.2 − 2608	RBS 405	49.0622	−26.1326	0.443	Sbarufatti+ (2005)	bll	BLLAC	0	-
J0316.2 − 6437	SUMSS J031614 − 643732	49.0597	−64.6254	0.210	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0316.8 + 4120	IC 310	49.1791	+41.3249	0.0190	Arp (1968)	RDG	MIS	0	SDSS. Seyfert 1, SA0 host galaxy, large viewing angle, Homan+ (2021, subm). Detailed classification in Gendron-Marsolais+ (2020)
J0316.9 − 0625	PMN J0317 − 0623	49.2709	−6.4136	0.533	Table A2	bcu	UNCL	1	-
J0317.7 − 2804	PKS 0315 − 282	49.3904	−28.0552	1.17	Kapahi+ (1998)	fsrq	AMB	0	Kapahi+ (1998) also classified it as CSS on the basis of radio observations ($\alpha \sim 0.52$), but the radio spectral index according to `specfind` is ~ 0.45. Borderline object.
J0317.8 − 4414	PKS 0316 − 444	49.4903	−44.2381	0.0760	Melnick+Quintana (1981)	bcu	MIS	0	In cluster, S0 host galaxy. Takizawa+ (2003) suggest it could be similar to M87 on the basis of X-ray observations with *Chandra*. Steep radio spectrum.
J0318.7 + 2135	MG3 J031849 + 2135	49.6903	+21.5769	1.83	Table A2	bll	UNCL	1	-
J0319.4 − 7045	MRSS 054 − 102986	50.0384	−70.7593	0.309	Table A2	bcu	UNCL	1	-
J0319.8 + 1845	1E 0317.0 + 1835	49.9659	+18.7596	0.190	Gioia+ (1984)	bll	BLLAC	0	-
J0319.8 + 4130	NGC 1275	49.9507	+41.5117	0.0176	Humason (1932)	RDG	MIS	0	Classified as FRI by Fanaroff+Riley (1974).
J0320.6 + 1125	1RXS J032037.9 + 112503	50.1585	+11.4145	0.494	Table A2	bcu	UNCL	1	-
J0321.3 + 0425	NVSS J032130 + 042628	50.3780	+4.4410	0.781	Table A2	bcu	UNCL	1	-
J0321.3 − 1612	PMN J0321 − 1612	50.2949	−16.2131	0.459	Table A2	bll	UNCL	1	-
J0322.0 + 2335	MG3 J032201 + 2336	50.4999	+23.6031	0.427	Table A2	bll	BLLAC	1	Paiano+ (2020)
J0322.9 + 0940	MG1 J032256 + 0941	50.7274	+9.6840	1.34	Table A2	bcu	UNCL	1	-
J0323.7 − 0111	1RXS J032342.6 − 011131	50.9317	−1.1962	0.031	Table A2	bll	BLLAC	1	SDSS
J0324.3 − 1313	NVSS J032430 − 131002	51.1288	−13.1675	-	-	bcu	UNCL	3	-
J0324.8 + 3412	1H 0323 + 342	51.1715	+34.1794	0.063	Zhou+ (2007)	nlsy1	NLS1	0	Sb host galaxy.
J0325.0 − 2416	PKS 0323 − 244	51.3056	−24.2633	1.16	Hook+ (2003)	fsrq	FSRQ	0	-
J0325.3 + 3332	2MASX J03251760 + 3332435	51.3233	+33.5455	0.128	de Menezes+ (2020)	bll	BLLAC	0	-
J0325.5 − 5635	1RXS J032521.8 − 563543	51.3480	−56.5957	0.0610	Grazian+ (2002)	bll	BLLAC	0	-
J0325.6 − 1646	RBS 421	51.4212	−16.7713	0.291	Schwope+ (2000)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0325.7 + 2225	TXS 0322 + 222	51.4034	+22.4001	2.06	Halpern+ (2003)	fsrq	FSRQ	0	-
J0325.9 − 1843	PMN J0325 − 1843	51.4774	−18.7366	0.309	Table A2	bcu	UNCL	1	-
J0326.2 + 0225	1H 0323 + 022	51.5581	+2.4207	0.147	Filippenko+ (1986)	bll	BLLAC	0	-
J0326.7 − 3404	NVSS J032644 − 340330	51.6839	−34.0577	-	-	bcu	UNCL	3	-
J0327.5 − 1805	CRATES J032743.34 − 180342.0	51.9306	−18.0617	0.730	Titov+ (2017)	bcu	FSRQ	0	-
J0328.8 − 5715	WISEA J032852.69 − 571605.5	52.2195	−57.2682	0.345	Table A2	bll	UNCL	1	-
J0330.6 + 0438	GB6 J0330 + 0439	52.6830	+4.6680	0.719	Table A2	bcu	UNCL	1	-
J0331.1 − 5243	PGC 013066	52.8125	−52.6967	0.0666	Lucey+ (1983)	bcu	MIS	0	FR0 according to Glowacki+ (2017).
J0331.3 − 6156	PMN J0331 − 6155	52.8270	−61.9246	0.140	Table A2	bll	UNCL	1	-
J0331.8 − 7040	SUMSS J033202 − 703952	53.0098	−70.6636	0.277	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0332.1 − 1123	1RXS J033223.2 − 111938	53.0969	−11.3307	0.207	Álvarez Crespo+ (2016)	fsrq	FSRQ	0	-
J0332.8 + 1557	GB6 J0332 + 1556	53.2168	+15.9490	0.934	Table A2	bcu	UNCL	1	-
J0333.1 + 8227	1RXS J033208.6 + 822654	53.0358	+82.4483	0.807	Table A2	bcu	UNCL	1	-
J0333.3 + 0233	NVSS J033321 + 023110	53.3400	+2.5197	0.863	Table A2	bcu	UNCL	1	-
J0333.7 + 2916	TXS 0330 + 291	53.4542	+29.2754	-	-	bll	BLLAC	2	Álvarez Crespo+ (2016)
J0333.7 + 7851	WN B0326.7 + 7840	53.4357	+78.8413	0.791	Table A2	bll	UNCL	1	-
J0333.8 + 4007	B3 0330 + 399	53.4451	+40.1107	0.392	Table A2	bcu	UNCL	1	-
J0334.2 − 3725	PMN J0334 − 3725	53.5643	−37.4286	0.068	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0334.2 − 4008	PKS 0332 − 403	53.5569	−40.1404	1.36	Shaw+ (2013)	bll	BLLAC	0	The first value of $z = 1.445$ is reported by Barbieri+ (1975), referring to Burbidge+Strittmatter (1972), which in turn does not contain the source. The origin of that value of z cannot be found. Landoni+ (2015) found a featureless spectrum, likely due to a high activity of the jet.
J0334.3 + 3920	4C +39.12	53.5767	+39.3568	0.0206	Peterson (1979)	rdg	MIS	0	Low-Power Compact radio galaxy (FR0?) according to Giovannini+ (2001).
J0335.1 − 4459	SUMSS J033513 − 445939	53.8078	−44.9955	0.163	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0336.4 + 3224	NRAO 140	54.1254	+32.3082	1.26	Kristian+Sandage (1970)	fsrq	FSRQ	0	-
J0336.5 − 0348	1RXS J033623.3 − 034727	54.0992	−3.7941	0.160	Bauer+ (2000)	bll	BLLAC	0	-
J0336.8 − 3612	PKS 0335 − 364	54.2251	−36.2684	1.54	Cristiani+Koehler (1987)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0337.8 − 1157	PKS 0335 − 122	54.4810	−12.0679	3.45	Chu+ (1986)	fsrq	FSRQ	0	-
J0338.1 − 2443	2E 0336.0 − 2453	54.5521	−24.7306	0.251	Halpern+ (1997)	bll	BLLAC	0	-
J0338.5 + 1302	RX J0338.4 + 1302	54.6220	+13.0376	1.87	Table A2	bll	BLLAC	1	Paiano+ (2017)
J0338.7 − 5706	1RXS J033832.0 − 570449	54.6334	−57.0802	0.239	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0339.2 − 1736	PKS 0336 − 177	54.8071	−17.6002	0.0656	Bauer+ (2000)	bll	MIS	0	FR0 according to Glowacki+ (2017). S0 host galaxy.
J0339.5 − 0146	PKS 0336 − 01	54.8789	−1.7766	0.852	Bolton+Wall (1970)	fsrq	FSRQ	0	-
J0340.4 − 2422	NVSS J034022 − 242411	55.0954	−24.4020	0.683	Peña-Herazo+ (2017)	bcu	FSRQ	0	-
J0340.5 − 0256	TXS 0338 − 030	55.1358	−2.9151	0.618	Table A2	bcu	UNCL	1	-
J0340.5 − 2118	PKS 0338 − 214	55.1484	−21.3253	0.223	Sbarufatti+ (2005)	bll	BLLAC	0	-
J0342.2 + 3858	GB6 J0342 + 3858	55.5678	+38.9851	0.945	Shaw+ (2012)	fsrq	FSRQ	0	Warning: the source is in the machine-readable table on the published paper, but it was not ingested in the online table on Vizier.
J0342.8 − 3007	PKS 0340 − 302	55.6681	−30.1328	0.866	Table A2	bcu	UNCL	1	-
J0343.2 − 2529	PKS 0341 − 256	55.8313	−25.5048	1.42	Hook+ (2003)	fsrq	FSRQ	0	-
J0343.2 − 6444	PMN J0343 − 6442	55.8359	−64.7154	0.582	Table A2	bll	UNCL	1	-
J0343.4 + 3621	OE 367	55.8706	+36.3701	1.48	Vermeulen+Taylor (1995)	fsrq	FSRQ	0	-
J0344.2 + 3203c	1RXS J034418.2 + 320903	56.0758	+32.1510	-	-	bcu	UNCL	3	The young stellar cluster IC 348 is 3′ distant from the ROSAT counterpart (Preibisch+Zinnecker 2004).
J0344.4 + 3432	1RXS J034424.5 + 343016	56.1040	+34.5050	0.251	Table A2	bcu	UNCL	1	-
J0345.2 − 2353	NVSS J034518 − 235218	56.3263	−23.8723	0.526	Table A2	bll	BLLAC	1	6dF
J0345.5 − 3301	PKS 0343 − 330	56.3740	−32.9354	0.522	Table A2	bcu	UNCL	1	-
J0347.7 − 3616	PKS 0346 − 364	56.9962	−36.2768	0.761	Table A2	bcu	UNCL	1	Fornax cluster, $z = 0.0046$? MIS? (Robertson+Roach 1990).
J0348.5 − 2749	PKS 0346 − 27	57.1589	−27.8204	0.991	White+ (1988)	fsrq	FSRQ	0	-
J0348.6 − 1609	PKS 0346 − 163	57.1636	−16.1716	0.39	Meisner+Romani (2010)	bll	BLLAC	1	-
J0348.8 − 0828	AT20G J034845 − 082422	57.1901	−8.4069	1.14	Table A2	bcu	UNCL	1	-
J0348.9 − 4859	PKS 0347 − 491	57.3039	−48.9736	0.583	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0349.4 − 1159	1ES 0347 − 121	57.3466	−11.9909	0.159	Table A2	bll	AMB	1	Schachter+ (1993) reported $z = 0.185$ on the basis of weak absorption features of the host galaxy. There is another value of $z = 0.0321$ from a 6dF spectrum showing prominent emission lines identified as the Hβ/[OIII] complex (Jones+ 2009, quality factor 4). Sbarufatti+ (2005) found an agreement between their imaging redshift and the Schachter's one. Additionally, the SEDs published by several authors display the typical characteristics of a BL Lac object, which are inconsistent with the strong emission lines in the 6dF spectrum. A CLAGN? However, in this case, the first z would be wrong.
J0349.6 + 2410	TXS 0346 + 241	57.4304	+24.2533	-	-	bcu	UNCL	3	-
J0349.8 − 2103	PKS 0347 − 211	57.4909	−21.0466	2.944	Ellison+ (2001)	fsrq	FSRQ	0	-
J0350.0 + 0640	NVSS J034957 + 064126	57.4910	+6.6906	0.206	Table A2	bcu	UNCL	1	-
J0350.4 − 5144	1RXS J035037.0 − 514457	57.6542	−51.7493	0.275	Table A2	bcu	UNCL	1	-
J0350.6 − 3226	PKS 0348 − 326	57.6805	−32.5498	0.927	Hook+ (2003)	bcu	FSRQ	0	-
J0350.8 − 2814	GALEXASC J035051.31 − 281633.0	57.7138	−28.2758	0.685	Table A2	bcu	UNCL	1	-
J0352.0 − 2516	TXS 0350 − 253	58.0461	−25.2473	0.606	Table A2	bcu	UNCL	1	-
J0352.9 − 3623	XRS J0353 − 3623	58.2712	−36.3856	0.4	Falomo+Ulrich (2000)	bll	BLLAC	1	-
J0353.0 − 6831	PKS 0352 − 686	58.2400	−68.5214	0.087	Masetti+ (2006)	bll	MIS	0	Classified as FR0 by Glowacki+ (2017) (z wrong in that paper).
J0353.7 + 8257	WN B0343.1 + 8247	58.2855	+82.9421	0.0694	Bauer+ (2000)	bll	BLLAC	0	Marchesi+ (2018) reported a featureless spectrum, likely due to a change in the jet activity.
J0354.7 + 8009	S5 0346 + 80	58.6922	+80.1580	0.743	Table A2	bll	BLLAC	1	Henstock+ (1997)
J0354.7 − 1617	PKS 0352 − 164	58.6043	−16.2729	1.19	Jauncey+ (1984)	fsrq	FSRQ	0	-
J0355.3 + 3909	CRATES J035515 + 390907	58.8191	+39.1527	0.846	Table A2	bcu	UNCL	1	-
J0356.1 − 1329	NVSS J035611 − 132908	59.0454	−13.4850	0.234	Table A2	bcu	UNCL	1	-
J0357.0 − 4955	PKS 0355 − 500	59.2508	−49.9302	0.643	Shaw+ (2013)	bll	BLLAC	0	-
J0357.2 + 2320	MG3 J035721 + 2319	59.3400	+23.3316	1.25	Table A2	bcu	UNCL	1	Massaro+ (2015) reported $z = 1.484$, but with an uncertainty flag and no indication of the origin. Dallacasa+ (2000) classified it as GPS/HFP.
J0357.2 − 0319	2MASS J03572609 − 0317596	59.3588	−3.2999	0.239	Table A2	bcu	UNCL	1	-
J0357.6 − 4625	PKS 0355 − 465	59.3697	−46.4287	0.100	Peña-Herazo+ (2021)	bcu	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0358.0 − 6946	PMN J0357 − 6948	59.3753	−69.8125	-	-	bcu	UNCL	3	-
J0358.1 − 5954	AT20G J035814 − 595233	59.5583	−59.8759	0.488	Table A2	bll	UNCL	1	-
J0358.6 + 0634	PMN J0358 + 0629	59.6131	+6.4887	0.654	Table A2	bcu	UNCL	1	-
J0358.7 + 7649	WN B0351.8 + 7640	59.6263	+76.8242	0.662	Table A2	bcu	UNCL	1	-
J0359.0 − 3053	NVSS J035856 − 305446	59.7342	−30.9128	0.136	Table A2	bll	BLLAC	1	Landoni+ (2013). Arsioli+ (2015) gives $z = 0.650$, but with a uncertainty flag and no indication of the origin of this value.
J0359.4 − 2616	PKS 0357 − 264	59.8903	−26.2587	0.886	Table A2	bll	BLLAC	1	Drinkwater+ (1997) reported $z = 1.47$, but the published spectrum is almost featureless and there is no indication on which lines the value of z is based. Hook+ (2003) reported another featureless spectrum, and challenged the Drinkwater's measurement.
J0400.7 + 3920	GB6 J0400 + 3921	60.1891	+39.3527	1.10	Table A2	bcu	UNCL	1	-
J0401.0 − 5353	1RXS J040111.9 − 535456	60.2996	−53.9156	0.489	Table A2	bcu	UNCL	1	-
J0401.3 + 0412	MG1 J040119 + 0412	60.3330	+4.2262	0.306	Sowards-Emmerd+ (2005)	bcu	BLLAC	0	-
J0401.7 + 2112	TXS 0358 + 210	60.4382	+21.1746	0.834	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J0401.9 − 2034	PMN J0401 − 2034	60.4696	−20.5861	0.626	Table A2	bcu	UNCL	1	-
J0402.0 + 2737	87GB 035856.9 + 272842	60.5133	+27.6211	1.27	Table A2	bcu	UNCL	1	-
J0402.0 − 2616	PKS 0359 − 264	60.5033	−26.2609	0.407	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0402.1 − 3147	PKS 0400 − 319	60.5886	−31.7905	1.29	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J0403.3 + 2601	OF 200	60.7733	+26.0004	2.11	Schmidt (1977)	fsrq	FSRQ	0	-
J0403.5 − 2437	TXS 0401 − 248	60.9239	−24.7357	0.598	Healey+ (2008)	bll	FSRQ	0	-
J0403.9 − 3605	PKS 0402 − 362	60.9740	−36.0839	1.42	Surdej+Swings (1981)	FSRQ	FSRQ	0	-
J0404.1 − 1715	PMN J0404 − 1718	61.1070	−17.3074	0.554	Table A2	bcu	UNCL	1	-
J0404.3 − 1559	PMN J0404 − 1559	61.1737	−15.9905	1.22	Table A2	bcu	UNCL	1	-
J0405.6 − 1308	PKS 0403 − 13	61.3917	−13.1371	0.571	Lynds (1967)	fsrq	FSRQ	0	-
J0406.0 − 5407	SUMSS J040608 − 540445	61.5361	−54.0805	0.193	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0407.0 − 3826	PKS 0405 − 385	61.7460	−38.4411	1.28	Veron+ (1990)	fsrq	FSRQ	0	-
J0407.5 + 0741	TXS 0404 + 075	61.8712	+7.7021	1.13	Sowards-Emmerd+ (2003)	bll	CLAGN	0	Classified as BL Lac Object by Sowards-Emmerd and reclassified as FSRQ by Shaw+ (2012).
J0409.4 + 3201	NVSS J040928 + 320245	62.3684	+32.0460	0.243	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0409.8 − 0359	NVSS J040946 − 040003	62.4441	−4.0010	0.666	Table A2	bll	BLLAC	1	Paiano+ (2017)
J0411.7 + 3041	GB6 J0411 + 3040	62.9436	+30.6632	-	-	bcu	UNCL	3	-
J0412.3 + 0239	PKS 0409 + 025	63.1196	+2.6772	0.833	Table A2	bcu	UNCL	1	-
J0413.1 − 5332	PMN J0413 − 5332	63.3061	−53.5335	1.02	Shaw+ (2012)	fsrq	FSRQ	0	-
J0414.6 − 0842	NVSS J041433 − 084206	63.6379	−8.7019	0.735	Table A2	bcu	BLLAC	1	Paiano+ (2019)
J0414.8 − 5338	RBS 526	63.7422	−53.6622	0.825	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0415.2 − 5741	1RXS J041505.7 − 574237	63.7737	−57.7104	0.698	Table A2	bcu	UNCL	1	-
J0416.0 − 4743	PMN J0415 − 4737	63.9761	−47.6265	0.475	Table A2	bcu	UNCL	1	-
J0416.0 − 6628	PMN J0416 − 6629	64.0217	−66.4826	0.385	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0416.2 − 4353	SUMSS J041613 − 435057	64.0553	−43.8489	1.04	Table A2	fsrq	UNCL	1	-
J0416.5 − 1852	PKS 0414 − 189	64.1523	−18.8523	1.54	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0416.9 + 0105	1ES 0414 + 009	64.2187	+1.0900	0.287	Halpern+ (1991)	bll	BLLAC	0	-
J0418.1 − 0252	PKS B0415 − 029	64.4928	−2.8387	0.125	Table A2	bcu	UNCL	1	-
J0418.4 + 3414	GB6 J0418 + 3411	64.5415	+34.1930	1.26	Table A2	bcu	UNCL	1	-
J0420.0 + 0805	PMN J0419 + 0804	64.9967	+8.0774	1.14	Table A2	bcu	UNCL	1	-
J0420.3 − 3745	NVSS J042025 − 374443	65.1046	−37.7458	0.257	Table A2	bcu	UNCL	1	-
J0420.3 − 6016	1RXS J042012.8 − 601446	65.0534	−60.2462	0.225	Table A2	bcu	UNCL	1	-
J0421.0 − 0752	PKS 0418 − 079	65.2248	−7.8722	0.193	Table A2	bcu	UNCL	1	-
J0422.1 − 0644	PMN J0422 − 0643	65.5450	−6.7293	0.242	Shaw+ (2012)	fsrq	FSRQ	0	Shaw+ (2012) measured FWHM(Hβ) = 2500 $\pm$ 800 km/s: candidate NLS1?
J0422.3 + 1951	MS 0419.3 + 1943	65.5771	+19.8481	0.512	Stocke+ (1991)	bll	BLLAC	0	-
J0422.8 + 0225	PKS 0420 + 022	65.7176	+2.3241	2.28	Hook+ (2003)	fsrq	FSRQ	0	-
J0423.1 + 2106	TXS 0420 + 210	65.7583	+21.1339	0.649	Table A2	bcu	UNCL	1	-
J0423.3 − 0120	PKS 0420 − 01	65.8158	−1.3425	0.915	Bolton+ (1970)	FSRQ	FSRQ	0	-
J0424.7 + 0036	PKS 0422 + 00	66.1952	+0.6018	0.268	Shaw+ (2013)	bll	BLLAC	0	-
J0424.9 − 5331	PMN J0425 − 5331	66.2678	−53.5328	0.175	Table A2	bll	BLLAC	1	Landoni+ (2015). The 3LAC indicated $z = 0.39$, but it seems to be the lower limit suggested by Shaw+ (2013), yet on the basis of a featureless spectrum.
J0426.7 + 6826	4C +68.05	66.7086	+68.4314	0.581	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0427.3 − 3900	PMN J0427 − 3900	66.8403	−39.0167	0.718	Table A2	bcu	UNCL	1	-
J0428.6 − 3756	PKS 0426 − 380	67.1684	−37.9388	1.11	Heidt+ (2004)	bll	BLLAC	0	-
J0428.7 − 5003	PMN J0428 − 5005	67.1776	−50.0929	1.33	Table A2	bcu	UNCL	1	-
J0429.0 − 0006	TXS 0426 − 002	67.3297	−0.1030	1.06	Table A2	bcu	UNCL	1	-
J0429.3 − 3238	NVSS J042900 − 323638	67.2508	−32.6108	1.10	Table A2	bll	BLLAC	1	Arsioli+ (2015)
J0429.3 − 4326	PKS 0427 − 435	67.3543	−43.4768	1.42	Hook+ (2003)	fsrq	FSRQ	0	-
J0429.8 + 2843	MG2 J042948 + 2843	67.4583	+28.7148	1.23	Table A2	bcu	UNCL	1	-
J0429.9 − 3101	MRSS 421 − 156568	67.4956	−30.9931	0.218	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0430.2 − 0356	PMN J0431 − 0406	67.8670	−4.1075	0.623	Titov+ (2013)	bcu	FSRQ	0	-
J0430.3 + 1654	MG1 J043022 + 1655	67.5931	+16.9180	0.758	Table A2	bcu	UNCL	1	-
J0430.3 − 2507	PMN J0430 − 2507	67.5668	−25.1275	0.516	Shaw+ (2012)	bll	BLLAC	0	-
J0431.8 + 7403	GB6 J0431 + 7403	67.9378	+74.0574	1.35	Table A2	bll	BLLAC	1	Marchesi+ (2018)
J0432.0 + 1732	TXS 0429 + 174	67.9891	+17.5266	1.23	Table A2	bcu	BLLAC	1	Landt+ (2004, 2008) reported a featureless spectrum with a tentative $z = 0.143$ based on absorption features (it would be a lower limit).
J0433.0 + 0522	3C 120	68.2962	+5.3543	0.0336	Arp (1968)	RDG	MIS	0	BLRG, Sy1, FRI, S0 host galaxy, Walker+ (1987)
J0433.1 + 3227	NVSS J043307 + 322840	68.2815	+32.4780	-	-	bll	BLLAC	2	Paiano+ (2020)
J0433.5 − 1039	1RXS J043333.5 − 104220	68.3870	−10.7090	0.217	Table A2	bcu	UNCL	1	-
J0433.6 + 2905	MG2 J043337 + 2905	68.4076	+29.0987	0.655	Table A2	bll	BLLAC	1	Many authors reported a featureless spectrum. However, Massaro+ (2009) gave $z = 0.97$ with a uncertain flag and without information on the origin of this value. Paiano+ (2020) found a doubtful emission feature, which could be MgII (hence $z = 0.91$).
J0433.6 − 6030	PKS 0432 − 606	68.3921	−60.5038	0.930	Titov+ (2013)	fsrq	FSRQ	0	-
J0433.7 − 5725	SUMSS J043344 − 572613	68.4339	−57.4370	0.421	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0434.1 − 2014	TXS 0431 − 203	68.5330	−20.2548	0.928	Shaw+ (2013)	bll	BLLAC	0	-
J0434.4 − 2342	PMN J0434 − 2342	68.6207	−23.7015	0.979	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0434.7 + 0922	TXS 0431 + 092	68.6708	+9.3969	0.882	Table A2	bll	BLLAC	1	Paiano+ (2020)
J0435.4 − 2623	1RXS J043518.7 − 262120	68.8240	−26.3562	0.418	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0436.7 − 7148	PKS 0437 − 719	69.2682	−71.8056	0.8	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0436.8 − 5223	AT20G J043652 − 521639	69.2175	−52.2776	0.618	Table A2	bcu	UNCL	1	-
J0437.2 − 5846	PKS 0435 − 587	69.1801	−58.6695	0.307	Table A2	bcu	UNCL	1	-
J0437.4 − 6155	PMN J0437 − 6157	69.3324	−61.9486	-	-	bcu	BLLAC	2	Peña-Herazo+ (2021)
J0438.4 − 1254	PKS 0436 − 129	69.6459	−12.8509	1.28	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0438.7 − 3441	NVSS J043844 − 344149	69.6867	−34.6970	0.383	Table A2	bcu	AMB	1	Warning! The coordinates of the 4FGL proposed counterpart SUMSS J043612 − 342230 are $\sim 36'$ (!) distant from the LAT centroid and well outside the 95% error contours ($3.6' \times 3.1'$). NVSS J043844 − 344149 is the only radio source within the LAT centroid. Its optical spectrum from 6dF is inconclusive.
J0438.9 − 4521	PKS 0437 − 454	69.7536	−45.3729	2.02	Shaw+ (2013)	bll	BLLAC	0	-
J0439.2 + 2151	IERS B0435 + 217	69.7329	+21.8862	1.27	Table A2	bcu	UNCL	1	-
J0439.4 − 3202	1RXS J043931.4 − 320045	69.8842	−32.0145	0.343	Table A2	bcu	UNCL	1	-
J0439.8 − 1859	1SXPS J043949.5 − 190102	69.9572	−19.0171	0.708	Table A2	bll	UNCL	1	-
J0440.2 − 2458	RBS 570	70.0776	−24.9926	0.324	Table A2	bll	BLLAC	1	Schwope+ (2000) set $z = 0.6$, but with uncertain flag.
J0440.3 − 4333	PKS 0438 − 43	70.0716	−43.5524	2.85	Morton+ (1987)	fsrq	FSRQ	0	-
J0440.4 + 1440	TXS 0437 + 145	70.0881	+14.6325	1.11	Table A2	bcu	UNCL	1	-
J0440.8 + 2749	B2 0437 + 27B	70.2099	+27.8464	0.2	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0441.3 − 2617	1RXS J044120.5 − 261659	70.3354	−26.2832	1.249	Table A2	bcu	UNCL	1	-
J0441.5 + 1505	1RXS J044127.8 + 150455	70.3642	+15.0822	0.109	Piranomonte+ (2007)	bll	BLLAC	0	-
J0442.6 − 0017	PKS 0440 − 00	70.6611	−0.2954	0.844	Schmidt (1977)	fsrq	NLS1	0	Shaw+ (2012) measured FWHM(Hβ) = 1700 ± 1100.
J0442.7 + 6142	GB6 J0442 + 6140	70.6694	+61.6776	0.2	Table A2	bcu	UNCL	1	-
J0443.3 − 6652	PMN J0443 − 6651	70.8258	−66.8679	0.746	Peña-Herazo+ (2021)	bcu	FSRQ	0	-
J0443.4 − 4152	1RXS J044328.4 − 415151	70.8683	−41.8656	0.314	Table A2	bll	BLLAC	1	Arsioli+ (2015)
J0444.5 + 0719	PMN J0444 + 0717	71.0915	+7.2883	0.844	Table A2	bcu	UNCL	1	-
J0445.1 − 6012	PMN J0444 − 6014	71.2563	−60.2499	0.097	Abdo+ (2010)	fsrq	FSRQ	0	-
J0447.2 − 2539	2MASS J04472149 − 2539302	71.8394	−25.6585	0.166	Table A2	bcu	UNCL	1	-
J0447.4 − 2747	MRC 0445 − 278	71.8172	−27.8019	1.10	Table A2	bcu	UNCL	1	-
J0448.6 − 1632	RBS 589	72.1568	−16.5453	1.77	Table A2	bll	BLLAC	1	Chang+ (2017)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0449.1 + 1121	PKS 0446 + 11	72.2820	+11.3579	2.15	Shaw+ (2012)	fsrq	CLAGN	0	First value of $z = 1.2$ is reported by von Montigny+ (1995), but with no indication of the origin. This value is challenged by Halpern+ (2003), who found a featureless spectrum (epoch 1996-2002). Additionally, Afanas'ev+ (2005) observed a featureless spectrum in 2001-2002. The spectrum taken by Shaw+ (2012) clearly shows a prominent CIV at $z = 2.15$ (epoch unknown, but likely in 2010s).
J0449.2 + 6329	S4 0444 + 63	72.3471	+63.5360	0.781	Stickel+Kuhr (1993)	fsrq	FSRQ	0	-
J0449.4 − 4350	PKS 0447 − 439	72.3529	−43.8358	0.205	Perlman+ (1998)	bll	BLLAC	0	The first identification as FSRQ/Sy1 at $z = 0.107$ by Craig & Fruscione (1997) is wrong. This source is $\sim 1.2'$ distant from the radio position. The Perlman's counterpart is almost coincident with the radio coordinates and the redshift value is confirmed by Prandini+ (2012). However, this value, based on the Ca H&K break, is not confirmed by Pita+ (2014), but the non-detection could be due to an increased jet activity.
J0449.6 − 8100	PKS 0454 − 81	72.5227	−81.0173	0.444	Stickel+ (1989)	fsrq	FSRQ	0	-
J0450.3 − 4419	PMN J0450 − 4418	72.5088	−44.3059	0.742	Table A2	bcu	UNCL	1	-
J0450.4 + 7230	NVSS J045109 + 723014	72.7904	+72.5035	0.552	Table A2	bcu	UNCL	1	-
J0450.7 − 4938	AT20G J045102 − 493626	72.7612	−49.6074	0.748	Table A2	bcu	UNCL	1	-
J0451.8 − 4651	PKS 0450 − 469	72.9723	−46.8889	0.602	Titov+ (2013)	fsrq	FSRQ	0	-
J0452.0 + 2100	1RXS J045214.8 + 210307	73.0638	+21.0511	0.417	Table A2	bcu	UNCL	1	-
J0453.1 + 6322	NVSS J045312 + 632117	73.3019	+63.3550	2.10	Table A2	bll	UNCL	1	-
J0453.1 − 2806	PKS 0451 − 28	73.3110	−28.1270	2.56	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0455.7 − 4617	PKS 0454 − 46	73.9616	−46.2663	0.858	Fricke+ (1983)	fsrq	FSRQ	0	-
J0456.2 + 2702	MG2 J045613 + 2702	74.0724	+27.0392	-	-	bcu	UNCL	3	-
J0456.4 − 4043	PMN J0456 − 4041	74.1346	−40.6895	0.606	Table A2	bcu	UNCL	1	-
J0456.6 − 3136	PMN J0456 − 3135	74.1528	−31.6035	0.865	Shaw+ (2012)	fsrq	FSRQ	0	-
J0457.0 + 0646	4C +06.21	74.2821	+6.7520	0.405	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J0457.0 − 2324	PKS 0454 − 234	74.2632	−23.4145	1.01	Stickel+ (1989)	FSRQ	BLLAC	0	-
J0458.0 + 1152	NVSS J045804 + 115142	74.5204	+11.8620	0.152	Table A2	bcu	UNCL	1	-
J0459.4 + 1921	1RXS J045931.5 + 192242	74.8813	+19.3783	0.385	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0500.6 − 4911	PMN J0500 − 4912	75.1617	−49.2046	0.193	Table A2	bll	UNCL	1	-
J0501.0 + 2424	1RXS J050107.1 + 242318	75.2788	+24.3884	0.838	Table A2	bcu	UNCL	1	-
J0501.2 − 0158	S3 0458 − 02	75.3034	−1.9873	2.29	Strittmatter+ (1974)	fsrq	FSRQ	0	-
J0502.4 + 0609	PKS 0459 + 060	75.5644	+6.1521	1.11	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J0502.5 + 1340	PKS 0459 + 135	75.6384	+13.6364	0.35	Truebenbach+Darling (2017)	bll	BLLAC	0	-
J0502.9 + 6533	1E 0458.1 + 6530	75.7742	+65.5670	0.240	Table A2	bll	UNCL	1	-
J0503.1 − 6045	PKS 0503 − 608	76.0071	−60.8313	1.04	Titov+ (2013)	fsrq	FSRQ	0	-
J0503.5 − 1116	1RXS J050335.6 − 111504	75.8971	−11.2519	2.26	Table A2	bll	BLLAC	1	Arsioli+ (2015)
J0505.3 + 0459	PKS 0502 + 049	76.3466	+4.9952	0.954	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J0505.6 + 0415	MG1 050533 + 0415	76.3949	+4.2652	0.424	Pita+ (2014)	bll	BLLAC	0	The value of $z = 0.0272$ by Bauer+ (2000) seems to be wrong.
J0505.6 + 6405	TXS 0500 + 640	76.4206	+64.1073	1.27	Table A2	bcu	UNCL	1	-
J0505.6 − 1558	TXS 0503 − 160	76.4233	−15.9773	0.415	Table A2	bll	UNCL	1	-
J0505.8 − 0419	S3 0503 − 04	76.4635	−4.3241	1.48	Veron (1994)	fsrq	FSRQ	0	-
J0505.8 − 3817	1RXS J050559.9 − 382059	76.5070	−38.3488	0.182	Jones+ (2009)	bll	BLLAC	0	-
J0506.0 + 6113	RX J0505.9 + 6113	76.4949	+61.2267	0.3	Table A2	bll	BLLAC	1	Paiano+ (2020) reported a featureless spectrum, with a hint of Ca H&K break, which would imply $z = 0.538$.
J0506.0 − 0357c	NVSS J050605 − 040152	76.5249	−4.0312	1.22	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0506.7 − 0857	1WGA J0506.6 − 0857	76.6663	−8.9672	0.486	Table A2	bll	UNCL	1	-
J0506.9 + 0323	NVSS J050650 + 032401	76.7089	+3.3997	0.593	Table A2	bcu	BLLAC	1	Paiano+ (2019)
J0506.9 − 5435	1ES 0505 − 546	76.7409	−54.5844	0.101	Table A2	bll	BLLAC	1	Masetti+ (2013)
J0507.4 − 3346	1RXS J050727.6 − 334628	76.8636	−33.7765	0.288	Table A2	bcu	BLLAC	1	6dF
J0507.7 − 6104	PMN J0507 − 6104	76.9778	−61.0786	1.09	Shaw+ (2012)	fsrq	FSRQ	0	-
J0507.9 + 6737	1ES 0502 + 675	76.9840	+67.6234	0.340	Shaw+ (2013)	bll	BLLAC	0	There are two more estimates of z: one from Perlman (1998, $z = 0.314$), reported by Scarpa+ (1999) as private communication; the other ($z = 0.416$) is from Landt+ (2002), who challenged the Perlman's measurement and proposed the new one after an inspection of the same spectrum. However, it was not possible to find these spectra either in publications or elsewhere. The only spectrum available online is that published by Shaw+ (2013).

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0508.2 − 1937	PMN J0508 − 1936	77.0792	−19.5989	1.88	Álvarez Crespo+ (2016)	fsrq	FSRQ	0	-
J0509.1 + 1943	TXS 0506 + 196	77.3254	+19.6918	0.577	Table A2	bcu	UNCL	1	-
J0509.4 + 0542	TXS 0506 + 056	77.3582	+5.6931	0.336	Paiano+ (2018)	bll	BLLAC	0	Neutrino blazar.
J0509.4 + 1012	PKS 0506 + 101	77.3644	+10.1957	0.621	Shaw+ (2012)	fsrq	CLAGN	0	Afanas'ev+ (2005) observed a featureless spectrum: changing-look AGN.
J0509.6 + 8425	S5 0454 + 84	77.1765	+84.5346	0.112	Torrealba+ (2012)	bll	BLLAC	0	There is a long debate on the value of z. Lawrence+ (1996) suggested $z = 0.112$ on the basis of a weak detection of [OIII]—confirmed by Torrealba+ (2012)—but Stocke+Rector (1997) suggested $z > 1.34$ on the basis of an absorption feature identified as MgII. Warning: this lower limit is often confused as a measured value many times in the literature and by SIMBAD and NED. Scarpa+ (2000) supported the high-z lower limit on the basis of the host galaxy unresolved by HST.
J0509.6 − 0402	1H 0506 − 039	77.4091	−4.0127	0.144	Table A2	bll	UNCL	1	There is a value $z = 0.304$ available in the literature, but it was not possible to find either the origin of this measurement or a new spectrum confirming the value. The first paper found reporting this value is Laurent-Muehleisen+ (1993), but it has no reference.
J0509.9 − 6417	RBS 625	77.4887	−64.2949	0.271	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0510.0 + 1800	PKS 0507 + 17	77.5099	+18.0116	0.416	Perlman+ (1998)	fsrq	CLAGN	0	Labiano+ (2007) reported $z = 0.3$ by referring to de Vries+ (1997). However, the latter does not give any z for this source. On the contrary de Vries+ (2000) published a new spectrum confirming Perlman's value, but with weaker lines and suggesting a BL Lac nature. This implies a changing-look AGN. Note that Shaw+ (2013) associated the gamma-ray source with another counterpart placed at $\sim 7.4'$ from PKS 0507 + 17 and with a featureless spectrum.
J0510.4 − 1809	CRATES J051015.50 − 181227.8	77.5639	−18.2078	1.12	Table A2	bcu	UNCL	1	-
J0511.4 − 6804	PMN J0511 − 6806	77.8732	−68.1048	-	-	bcu	UNCL	3	Warning: in the field of the Large Magellanic Cloud.
J0513.9 − 3746	NVSS J051404 − 374607	78.5167	−37.7680	0.793	Table A2	bll	UNCL	1	-
J0514.5 + 6247	GB6 J0514 + 6244	78.5901	+62.7443	0.167	Table A2	bcu	UNCL	1	-
J0515.5 − 0125	NVSS J051536 − 012427	78.9010	−1.4078	1.16	Table A2	bcu	UNCL	1	-
J0515.6 − 4556	PKS 0514 − 459	78.9385	−45.9453	0.194	Stickel+ (1993)	fsrq	AMB	0	Stickel reported narrow Hα (FWHM∼2000 km/s): NLS1? SEY? FSRQ?

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0515.8 + 1527	GB6 J0515 + 1527	78.9473	+15.4546	0.648	Table A2	bll	BLLAC	1	Paiano+ (2020)
J0515.9 + 0537	TXS 0513 + 054	78.9654	+5.5501	-	-	bcu	UNCL	3	-
J0516.1 − 7240	PKS 0517 − 726	79.1572	−72.6187	0.536	Table A2	bcu	UNCL	1	-
J0516.4 + 7350	GB6 J0516 + 7350	79.1301	+73.8524	0.251	Shaw+ (2013)	bll	BLLAC	0	-
J0516.7 − 6207	PKS 0516 − 621	79.1872	−62.1182	1.30	Shaw+ (2012)	bll	BLLAC	0	-
J0516.8 − 0509	PMN J0517 − 0520	79.3671	−5.3447	1.41	Titov+ (2003)	bcu	FSRQ	0	-
J0517.5 + 0858	PMN J0517 + 0858	79.4169	+8.9766	0.328	Shaw+ (2012)	fsrq	FSRQ	0	-
J0517.7 − 1758	PMN J0517 − 1756	79.3502	−17.9400	0.952	Table A2	bcu	UNCL	1	-
J0519.0 + 0851	TXS 0516 + 087	79.7950	+8.8158	1.27	Table A2	bcu	UNCL	1	-
J0519.6 − 4544	Pictor A	79.9572	−45.7788	0.0342	Schmidt (1965)	rdg	MIS	0	FRII, BLRG, Seyfert 1, SA0 host galaxy Angioni+ (2020)
J0521.2 + 1637	3C 138	80.2912	+16.6395	0.759	Lynds+ (1966)	css	MIS	0	CSS, Seyfert 1.5, steep radio spectrum (borderline), details Dallacasa+ (2021)
J0521.3 − 1734	TXS 0519 − 176	80.3482	−17.6251	0.347	Titov+ (2013)	fsrq	FSRQ	0	No line measurements, but the visual inspection of the spectrum shows prominent [OIII] lines, weak Hβ, and FeII bumps. NLS1 or even SEY?
J0521.6 + 0103	NVSS J052140 + 010257	80.4200	+1.0488	1.54	Table A2	bll	BLLAC	1	The SDSS
J0521.8 − 3848	PKS 0520 − 388	80.4553	−38.8419	0.427	Table A2	bcu	UNCL	1	-
J0522.9 − 3628	PKS 0521 − 36	80.7416	−36.4586	0.055	Westerlund+Stokes (1966)	AGN	CLAGN	0	Changing-look AGN (Danziger et al. 1979, Ulrich 1981). Early optical spectroscopic observations (Westerlund+Stockes 1966) revealed an almost featureless spectrum, but with some weak features that allowed to measure z. More recent spectra displayed prominent emission lines typical of BLRG/Seyfert 1 galaxies (e.g., Stickel+ (1993), Sbarufatti+ (2006)). The radio morphology is FRI-type, with a viewing angle larger than 10 degrees (Angioni+ (2019)).
J0524.6 − 2819	PMN J0524 − 2818	81.2276	−28.3116	1.04	Table A2	bcu	UNCL	1	-
J0525.4 − 4600	PKS 0524 − 460	81.3808	−45.9652	1.48	Stickel+ (1993)	fsrq	FSRQ	0	-
J0525.6 − 2008	PMN J0525 − 2010	81.3668	−20.1801	0.092	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0525.6 − 6013	SUMSS J052542 − 601341	81.4268	−60.2278	0.637	Table A2	bcu	UNCL	1	-
J0525.8 − 0052	PMN J0525 − 0051	81.4776	−0.8612	0.704	Table A2	bll	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0526.1 + 6318	GB6 J0526 + 6317	81.5280	+63.2914	1.30	Table A2	bcu	UNCL	1	-
J0526.2 − 4830	PKS 0524 − 485	81.5695	−48.5102	1.30	Shaw+ (2012)	fsrq	FSRQ	0	-
J0526.7 − 1519	NVSS J052645 − 151900	81.6893	−15.3168	0.2	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0527.3 − 6223	PMN J0527 − 6225	81.9394	−62.4212	0.0835	Huchra+ (2012)	bcu	BLLAC	0	-
J0528.7 − 5920	1RXS J052846.9 − 592000	82.1919	−59.3344	1.13	Anderson+Filipovic (2009)	bll	BLLAC	0	-
J0529.1 + 0935	GB6 J0529 + 0934	82.2607	+9.5765	0.240	Table A2	bcu	UNCL	1	-
J0529.1 − 0101	PMN J0529 − 0058	82.2676	−0.9597	0.784	Table A2	bcu	UNCL	1	-
J0529.3 − 7243	PKS 0530 − 727	82.3752	−72.7579	-	-	bcu	UNCL	3	-
J0529.4 − 0521	PMN J0529 − 0519	82.4731	−5.3282	0.685	Healey+ (2008)	fsrq	FSRQ	0	-
J0530.9 + 1332	PKS 0528 + 134	82.7351	+13.5320	2.07	Hunter+ (1993)	FSRQ	FSRQ	0	-
J0532.0 − 4827	PMN J0531 − 4827	82.9942	−48.4600	0.812	Titov+ (2017)	BLL	BLLAC	0	-
J0532.6 + 0732	OG 50	83.1625	+7.5454	1.25	Sowards-Emmerd+ (2005)	FSRQ	FSRQ	0	-
J0532.8 − 3941	PKS 0531 − 397	83.2383	−39.6858	0.586	Table A2	bcu	UNCL	1	-
J0532.9 − 8325	PKS 0541 − 834	83.4098	−83.4099	0.774	Shaw+ (2012)	fsrq	FSRQ	0	-
J0533.0 − 8446	PMN J0532 − 8447	83.0139	−84.7994	-	-	bcu	UNCL	3	-
J0533.1 − 6119	MRC 0534 − 613A	83.6803	−61.3628	1.044	Table A2	bcu	UNCL	1	-
J0533.3 − 5549	PMN J0533 − 5549	83.3516	−55.8268	0.841	Table A2	bcu	UNCL	1	-
J0533.8 − 3749	PKS 0532 − 378	83.5729	−37.7904	1.67	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J0536.0 − 2754	PMN J0535 − 2751	83.9648	−27.8657	1.30	Table A2	bcu	UNCL	1	-
J0536.4 − 3343	1RXS J053629.4 − 334302	84.1211	−33.7174	0.194	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0536.4 − 3401	PKS 0534 − 340	84.1185	−34.0199	0.684	Caccianiga+ (2000)	fsrq	FSRQ	0	6dF
J0536.5 − 2548	GALEXASC J053626.90 − 254747.9	84.1120	−25.7967	0.619	Table A2	bcu	UNCL	1	-
J0537.7 − 5717	1RXS J053749.3 − 571844	84.4540	−57.3084	0.130	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0538.2 − 3910	NVSS J053810 − 390844	84.5432	−39.1451	0.211	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0538.6 + 0443	NVSS J053847 + 044222	84.6942	+4.7079	1.124	Table A2	bcu	UNCL	1	-
J0538.8 − 4405	PKS 0537 − 441	84.7098	−44.0858	0.894	Peterson+ (1976)	BLL	BLLAC	0	-
J0539.7 − 0521c	TXS 0537 − 052	84.9997	−5.2448	1.83	Table A2	bcu	UNCL	1	-
J0539.9 − 2839	PKS 0537 − 286	84.9762	−28.6655	3.11	Wright+ (1978)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0540.5 + 5823	GB6 J0540 + 5823	85.1250	+58.3940	-	-	bll	BLLAC	2	Paiano+ (2020)
J0540.8 − 5415	PKS 0539 − 543	85.1910	−54.3061	1.19	Healey+ (2008)	fsrq	FSRQ	0	-
J0541.1 − 4854	1RXS J054106.1 − 485408	85.2754	−48.9022	-	-	bcu	UNCL	3	-
J0541.4 − 7334	PKS 0542 − 735	85.4616	−73.5376	-	-	bcu	UNCL	3	In the field of LMC.
J0541.6 − 0541	PKS 0539 − 057	85.4087	−5.6971	0.839	Stickel+Kuhr (1993)	fsrq	FSRQ	0	Chu+ (1986) suggested $z = 2.32$ (uncertain) on the basis of one emission line identified as CIV.
J0542.8 − 3458	PMN J0542 − 3500	85.6958	−35.0075	0.201	Table A2	bcu	UNCL	1	-
J0542.9 − 0913	PMN J0542 − 0913	85.7328	−9.2253	-	-	bcu	UNCL	3	-
J0543.9 − 5531	1RXS J054357.3 − 553206	85.9884	−55.5354	0.273	Pita+ (2014)	bll	BLLAC	0	-
J0545.0 + 0613c	NVSS J054529 + 061955	86.3714	+6.3325	1.37	Table A2	bcu	UNCL	1	-
J0546.9 − 2206	1RXS J054656.9 − 220500	86.7333	−22.0817	0.247	Caccianiga+ (2002)	bll	BLLAC	0	Arsioli+ (2015) reported $z = 0.28$, but there is no indication on the origin of this measurement.
J0548.5 − 5218	PMN J0548 − 5218	87.1257	−52.3078	0.283	Table A2	bcu	UNCL	1	-
J0550.3 − 5733	PKS 0549 − 575	87.5399	−57.5401	2.00	Healey+ (2008)	fsrq	FSRQ	0	-
J0550.5 − 3216	PKS 0548 − 322	87.6690	−32.2712	0.0689	Fosbury+Disney (1976)	bll	BLLAC	0	-
J0551.0 − 1622	PMN J0550 − 1621	87.7136	−16.3639	0.956	Table A2	bcu	UNCL	1	-
J0551.8 − 3517	PMN J0551 − 3515	87.9263	−35.2592	0.332	Table A2	bcu	UNCL	1	-
J0552.8 + 0313	PKS 0550 + 032	88.2088	+3.2242	0.605	Table A2	bcu	UNCL	1	-
J0553.5 − 2034	NVSS J055333 − 203417	88.3880	−20.5719	1.07	Table A2	bll	UNCL	1	-
J0554.3 − 1009c	PMN J0555 − 1002	88.8845	−10.0353	1.92	Table A2	bcu	UNCL	1	-
J0555.1 + 0304	GB6 J0555 + 0304	88.7541	+3.0737	-	-	bcu	UNCL	3	-
J0556.2 − 4352	SUMSS J055618 − 435146	89.0781	−43.8628	0.467	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0557.3 − 0615	1RXS J055717.0 − 061705	89.3201	−6.2852	1.11	Table A2	bcu	UNCL	1	-
J0557.6 − 0721	PMN J0557 − 0719	89.4057	−7.3205	0.718	Table A2	bcu	UNCL	1	-
J0558.0 − 3837	EXO 0556.4 − 3838	89.5268	−38.6421	0.302	Sbarufatti+ (2005)	bll	BLLAC	0	-
J0558.1 − 2859	TXS 0556 − 289	89.4996	−28.9304	0.557	Table A2	bcu	UNCL	1	McCarthy+ (1996) suggested a radio galaxy classification.
J0558.8 − 7459	PKS 0600 − 749	89.6918	−74.9848	0.194	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0559.9 + 6409	GB6 J0559 + 6409	89.9970	+64.1662	0.318	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0600.6 − 3939	PKS 0558 − 396	90.1309	−39.6173	1.66	Perlman+ (1998)	fsrq	FSRQ	0	-
J0601.1 − 7035	PKS 0601 − 70	90.2969	−70.6024	2.41	Shaw+ (2012)	fsrq	FSRQ	0	-
J0601.3 + 5444	GB6 J0601 + 5443	90.2571	+54.7267	0.0524	Table A2	bcu	UNCL	1	-
J0601.3 − 7238	PMN J0601 − 7238	90.4222	−72.6426	0.134	Table A2	bll	UNCL	1	-
J0601.8 − 2003	PMN J0601 − 2004	90.4701	−20.0792	1.22	Shaw+ (2012)	fsrq	FSRQ	0	-
J0602.0 + 5315	GB6 J0601 + 5315	90.5019	+53.2667	0.0522	Paiano+ (2020)	bcu	BLLAC	0	-
J0602.7 − 0007	PMN J0602 − 0004	90.6787	−0.0743	0.118	de Menezes+ (2020)	bcu	BLLAC	0	-
J0602.8 − 4019	SUMSS J060251 − 401845	90.7137	−40.3126	0.203	Table A2	bll	UNCL	1	-
J0604.1 − 4816	1ES 0602 − 482	91.0359	−48.2903	0.130	Table A2	bll	BLLAC	1	Landoni+ (2015)
J0604.5 − 4851	SUMSS J060433 − 484947	91.1379	−48.8299	0.760	Table A2	bcu	UNCL	1	-
J0604.8 + 4411	S4 0600 + 44	91.1485	+44.2329	1.14	Vermeulen+Taylor (1995)	bcu	FSRQ	0	-
J0604.9 − 0000	GB6 J0604 + 0000	91.2434	+0.0120	-	-	bcu	UNCL	3	-
J0606.5 − 4730	RX J060635.9 − 473001	91.6489	−47.4986	0.0298	Pietsch+ (1998)	bcu	SEY	0	Pietsch classified it as Seyfert2/LINER.
J0606.9 + 4402	CRATES J060650 + 440144	91.7092	+44.0280	0.682	Table A2	bcu	UNCL	1	-
J0607.2 − 2518	1RXS J060714.2 − 251855	91.8096	−25.3161	0.275	Piranomonte+ (2007)	bll	BLLAC	0	-
J0607.4 + 4739	TXS 0603 + 476	91.8469	+47.6630	1.02	Table A2	bll	BLLAC	1	Paiano+ (2020)
J0608.0 + 6721	S4 0602 + 67	91.9695	+67.3487	1.97	Fomalont+ (2000)	fsrq	FSRQ	0	The redshift comes from a personal communication by Vermeulen & Taylor. No spectrum published.
J0608.0 − 0835	PKS 0605 − 08	91.9987	−8.5805	0.871	Allington-Smith+ (1991)	fsrq	FSRQ	0	-
J0608.1 − 1521	PMN J0608 − 1520	92.0064	−15.3436	1.09	Shaw+ (2012)	fsrq	FSRQ	0	-
J0608.1 − 6028	PKS 0607 − 605	91.9795	−60.5311	1.10	Landoni+ (2013)	fsrq	FSRQ	0	-
J0608.9 − 5456	PKS 0607 − 549	92.2044	−54.9452	1.00	Table A2	bcu	UNCL	1	-
J0609.0 − 2219	PKS 0606 − 223	92.2487	−22.3392	1.92	Spinrad+ (1979)	fsrq	FSRQ	0	-
J0609.2 − 0247	NVSS J060915 − 024754	92.3128	−2.7985	0.710	Table A2	bll	BLLAC	1	Massaro+ (2015)
J0610.1 − 1848	PMN J0610 − 1847	92.5745	−18.7945	0.485	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0610.9 − 6054	PKS 0609 − 609	92.6262	−60.9772	1.77	Healey+ (2008)	fsrq	FSRQ	0	-
J0611.1 + 4325	7C 0607 + 4324	92.7854	+43.4084	-	-	bcu	UNCL	3	-
J0611.6 − 2712	PMN J0611 − 2709	92.9420	−27.1449	1.063	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0612.5 − 3138	PKS 0610 − 316	93.1236	−31.6495	0.873	Hook+ (2003)	fsrq	FSRQ	0	-
J0612.5 − 3934	PMN J0612 − 3939	93.1575	−39.6498	0.403	Table A2	bcu	UNCL	1	-
J0612.8 + 4122	B3 0609 + 413	93.2133	+41.3771	0.764	Table A2	bll	BLLAC	1	Paiano+ (2020)
J0614.8 + 6136	GB6 J0614 + 6139	93.6757	+61.6523	0.812	Table A2	bcu	UNCL	1	-
J0615.3 − 3117	PKS 0613 − 312	93.8300	−31.2893	0.289	Table A2	bll	BLLAC	1	Hook+ (2003)
J0616.1 − 1732	1RXS J061609.5 − 173313	94.0429	−17.5515	-	-	bll	UNCL	3	-
J0616.7 − 1049	PMN J0616 − 1040	94.1742	−10.6857	1.08	Table A2	bcu	UNCL	1	-
J0616.9 + 4340	GB6 J0617 + 4340	94.2614	+43.6745	0.3	Table A2	bcu	UNCL	1	-
J0617.2 + 5701	87GB 061258.1 + 570222	94.3205	+57.0212	0.592	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0617.7 − 1715	IVS B0615 − 172	94.3892	−17.2570	0.098	Shaw+ (2013)	bll	BLLAC	0	There is another value – $z = 0.32$—reported in the 1FGL, but without any information except for a forthcoming paper (Piranomonte+D'Elia 2010, in preparation) that was never published.
J0618.1 − 2428	PMN J0618 − 2426	94.5944	−24.4439	0.299	Álvarez Crespo+ (2016)	fsrq	FSRQ	0	-
J0618.9 − 1138	TXS 0616 − 116	94.7671	−11.6819	1.29	Table A2	bcu	UNCL	1	NED reports $z = 0.97$ from Liang+Liu (2003). However, that paper did not deal with the optical identification: there is just an acknowledgement to G. Z. Xie for optical observations. No other more recent observation has been published to confirm this value of redshift.
J0620.5 − 2512	PKS 0618 − 252	95.1338	−25.2549	1.90	Ellison+ (2004)	bcu	FSRQ	0	-
J0621.2 − 2213	PMN J0621 − 2213	95.2926	−22.2285	-	-	bcu	UNCL	3	-
J0621.2 − 4648	IVS B0619 − 468	95.3310	−46.8329	1.21	Titov+ (2017)	bcu	FSRQ	0	-
J0621.7 − 3411	1RXS J062150.0 − 341140	95.4567	−34.1969	0.529	Piranomonte+ (2007)	bll	BLLAC	0	-
J0622.3 − 2605	PMN J0622 − 2605	95.5919	−26.0957	0.414	Jones+ (2009)	bll	BLLAC	0	6dF
J0622.4 − 6433	RX J062308.0 − 643619	95.7821	−64.6058	0.129	Keel+ (1988)	fsrq	FSRQ	0	-
J0622.7 − 4141	SUMSS J062242 − 414357	95.6771	−41.7330	-	-	bcu	UNCL	3	-
J0623.0 − 3010	PMN J0623 − 3010	95.7981	−30.1645	-	-	bcu	UNCL	3	-
J0623.7 − 3348	PMN J0623 − 3350	95.9163	−33.8374	-	-	bcu	UNCL	3	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0623.9 − 5259	MS 06225 − 5256	95.9079	−52.9661	0.513	Landoni+ (2013)	bll	BLLAC	1	Landoni reported $z = 0.513$ in his Table 2, but also $z = 0.443$ in his Figure 6. Upon request, Landoni confirmed $z = 0.513$. However, the value remains uncertain because the spectrum is featureless and z is calculated with reference to a zero-velocity template.
J0624.2 − 2943	1RXS J062422.3 − 294449	96.0929	−29.7469	-	-	bcu	UNCL	3	-
J0625.3 + 4439	GB6 J0625 + 4440	96.3261	+44.6671	0.591	Table A2	bll	BLLAC	1	Marchesini+ (2019)
J0625.8 − 5441	PMN J0625 − 5438	96.4676	−54.6474	2.05	Healey+ (2008)	fsrq	FSRQ	0	-
J0626.4 − 1712	2MASS J06262650 − 1710467	96.6095	−17.1796	0.775	Table A2	bll	UNCL	1	-
J0626.4 − 4259	2MASS J06263670 − 4258059	96.6529	−42.9683	0.3	Table A2	bll	UNCL	1	-
J0627.0 − 3529	PKS 0625 − 35	96.7780	−35.4876	0.0546	Tadhunter+ (1993)	rgd	MIS	0	FRI, Ekers+ (1989)
J0628.6 + 6900	GB6 J0629 + 6900	97.3427	+69.0054	0.131	Table A2	bcu	UNCL	1	SIMBAD gives $z = 0.37$ likely from Jannuzi+ (1998), but that optical source HS 0624 + 6907 is about $6'$ far from the radio position. Therefore, the association is likely to be wrong.
J0628.8 − 6250	PKS 0628 − 627	97.2395	−62.8124	-	-	bll	BLLAC	2	Shaw+ (2013)
J0629.3 − 1959	PKS 0627 − 199	97.3490	−19.9888	1.72	Shaw+ (2013)	bll	BLLAC	0	Tentative, one weak emission line (CIV).
J0630.2 + 3228	NVSS J063010 + 322608	97.5445	+32.4361	0.717	Table A2	bcu	UNCL	1	-
J0630.9 − 2406	TXS 0628 − 240	97.7480	−24.1128	1.23	Table A2	bll	BLLAC	1	Landt (2012). Warning: Landt+Bignall (2008) reported $z = 1.238$ as certain, while Landt (2012) wrote that it is a lower limit, because it is based on a MgII absorption doublet.
J0633.4 − 2222	PMN J0633 − 2223	98.3615	−22.3895	1.51	Healey+ (2008)	fsrq	FSRQ	0	-
J0634.9 − 2335	PMN J0634 − 2335	98.7458	−23.5867	1.53	Ackermann+ (2011)	fsrq	FSRQ	0	-
J0635.6 − 7518	PKS 0637 − 75	98.9438	−75.2713	0.659	Monroe+ (2016)	fsrq	FSRQ	0	-
J0636.5 + 7138	GB6 J0636 + 7138	99.1787	+71.6454	1.17	Table A2	bcu	UNCL	1	-
J0637.4 − 3537	WISE J063746.40 − 353648.3	99.4434	−35.6134	0.478	Table A2	bcu	UNCL	1	-
J0638.2 + 6020	GB6 J0638 + 6016	99.6490	+60.2842	0.386	Table A2	bcu	UNCL	1	-
J0638.6 + 7320	S5 0633 + 73	99.8415	+73.4161	1.85	Stickel+Kuhr (1996)	fsrq	FSRQ	0	-
J0638.7 + 5658	GB6 J0638 + 5701	99.6073	+57.0307	0.704	Table A2	bcu	UNCL	1	-
J0639.6 + 3503	B2 0635 + 35	99.7900	+35.1063	0.772	Table A2	bcu	UNCL	1	-
J0643.2 − 5356	PMN J0643 − 5358	100.8342	−53.9797	0.3	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0644.4 − 6712	PKS 0644 − 671	101.1169	−67.2159	1.93	Klindt+ (2017)	bcu	FSRQ	0	-
J0644.6 + 6039	NVSS J064435 + 603849	101.1489	+60.6475	0.234	Table A2	bll	BLLAC	1	Paiano+ (2017). SIMBAD proposes $z = 0.832$ from Sowards-Emmerd+ (2005), but this paper does not have this source in its list.
J0644.6 − 2853	NVSS J064443 − 285116	101.1823	−28.8546	0.784	Table A2	bcu	BLLAC	1	6dF
J0646.7 − 3913	PKS 0644 − 390	101.6288	−39.0609	0.681	Hook+ (2003)	fsrq	FSRQ	0	-
J0647.0 − 5138	1ES 0646 − 515	101.7918	−51.5966	0.161	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0647.7 − 4418	SUMSS J064744 − 441946	102.0196	−44.3162	-	-	bcu	UNCL	3	-
J0647.7 − 6058	PMN J0647 − 6058	101.9202	−60.9681	-	-	bcu	BLLAC	2	Shaw+ (2013)
J0647.8 + 4527	B3 0644 + 454	101.9580	+45.4197	0.577	Table A2	bcu	UNCL	1	-
J0648.0 − 3045	PKS 0646 − 306	102.0587	−30.7388	1.15	Hook+ (2003)	fsrq	FSRQ	0	-
J0648.4 − 6941	1RXS J064850.3 − 694519	102.2104	−69.7563	0.233	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0649.5 − 3139	NVSS J064933 − 313917	102.3900	−31.6556	-	-	bll	UNCL	3	-
J0650.5 − 2851	PMN J0650 − 2849	102.6372	−28.8216	-	-	bcu	UNCL	3	-
J0650.7 + 2503	1ES 0647 + 250	102.6937	+25.0499	0.41	Kotilainen+ (2011)	bll	BLLAC	1	A first tentative estimate of $z = 0.203$ by Falomo+Kotilainen (1999) is still often adopted, but seems to be wrong. The current redshift is estimated from the imaging of the host galaxy and is consistent with Meisner+Romani (2010). The most recent high S/N observation by Paiano+ (2017) still resulted in no features.
J0651.0 + 4013	RX J0651.0 + 4013	102.7726	+40.2272	0.316	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0651.4 + 6525	NVSS J065125 + 652458	102.8555	+65.4158	0.600	Table A2	bcu	UNCL	1	-
J0651.5 + 7956	WN B0643.2 + 7959	102.9949	+79.9422	0.793	Table A2	bcu	UNCL	1	-
J0652.1 − 4813	1RXS J065201.0 − 480858	103.0024	−48.1498	0.4	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J0653.7 + 2815	GB6 J0653 + 2816	103.4345	+28.2631	0.891	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J0654.0 − 4152	LEDA 571171	103.4995	−41.8625	0.091	Mahony+ (2011)	bcu	MIS	0	FRI according to Glowaki+ (2017). The 6dF redshift by Jones+ (2009) is wrong, likely due to a contaminating star.
J0654.3 + 5042	GB6 J0654 + 5042	103.5921	+50.7066	1.25	Shaw+ (2012)	fsrq	FSRQ	0	-
J0654.4 + 4514	B3 0650 + 453	103.5988	+45.2399	0.933	Henstock+ (1997)	FSRQ	FSRQ	0	-
J0654.6 − 4952	SUMSS J065518 − 495205	103.8268	−49.8683	-	-	bcu	UNCL	3	-
J0654.7 + 4246	B3 0651 + 428	103.6814	+42.7996	0.126	Marcha+ (1996)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0656.3 + 4235	4C +42.22	104.0444	+42.6174	0.059	Laurent-Muheleisen+ (1998)	bll	BLLAC	0	-
J0658.1 − 5840	PMN J0658 − 5840	104.5574	−58.6743	0.421	Titov+ (2013)	bcu	FSRQ	0	-
J0658.2 + 2709	B2 0655 + 27A	104.5386	+27.1396	1.21	Table A2	bcu	UNCL	1	-
J0659.6 − 2742	TXS 0657 − 276	104.9580	−27.7551	1.73	Healey+ (2008)	fsrq	FSRQ	0	-
J0659.6 − 6742	1RXS J065933.5 − 674356	104.8872	−67.7306	0.424	Table A2	bcu	UNCL	1	-
J0700.1 − 6311	SUMSS J065958 − 631238	104.9945	−63.2108	0.592	Table A2	bcu	UNCL	1	-
J0700.5 − 6610	PKS 0700 − 661	105.1302	−66.1792	-	-	bll	BLLAC	2	Shaw+ (2013)
J0701.5 + 2511	1RXS J070132.1 + 250950	105.3838	+25.1640	0.602	Table A2	bcu	UNCL	1	-
J0701.5 − 4634	PKS 0700 − 465	105.3939	−46.5768	0.822	Hook+ (2003)	fsrq	FSRQ	0	-
J0703.2 − 3914	1RXS J070312.7 − 391417	105.8027	−39.2386	-	-	bll	UNCL	3	-
J0704.7 + 4508	B3 0701 + 451	106.2124	+45.0449	0.613	Table A2	bcu	UNCL	1	-
J0704.8 + 4907	87GB 070112.8 + 491056	106.2497	+49.1101	0.618	Table A2	bcu	UNCL	1	-
J0705.7 − 4848	PMN J0705 − 4847	106.4947	−48.7901	-	-	bcu	UNCL	3	-
J0705.9 + 5309	GB6 J0706 + 5309	106.5306	+53.1653	0.626	Table A2	bcu	UNCL	1	-
J0706.5 + 3744	GB6 J0706 + 3744	106.6321	+37.7434	0.656	Table A2	bll	BLLAC	1	Paiano+ (2020)
J0706.8 + 7742	NVSS J070651 + 774137	106.7139	+77.6936	0.565	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0706.9 + 6109	TXS 0702 + 612	106.7526	+61.1699	0.327	Table A2	bll	BLLAC	1	Henstock+ (1997)
J0708.9 + 4839	NGC 2329	107.2834	+48.6155	0.0192	Peterson (1979)	rdg	MIS	0	FRI, Wide-Angle Tail, S0 host galaxy, Ferretti+ (1985).
J0709.1 + 2241	GB6 J0708 + 2241	107.2429	+22.6932	0.297	Paiano+ (2020)	bll	BLLAC	0	-
J0710.4 + 5908	1H 0658 + 595	107.6253	+59.1390	0.125	Giommi+ (1991)	bll	BLLAC	0	-
J0710.8 − 3851	AT20G J071043 − 385037	107.6818	−38.8436	0.129	Nkundabakura+Meintjes (2012)	fsrq	FSRQ	0	-
J0710.9 + 4733	S4 0707 + 47	107.6921	+47.5364	1.29	Stickel+Kuhr (1994)	bll	FSRQ	0	-
J0712.4 + 5724	RX J0712.3 + 5719	108.0779	+57.3228	0.095	Beckmann+ (2003)	bll	BLLAC	0	-
J0712.7 + 5033	GB6 J0712 + 5033	108.1820	+50.5563	0.502	Shaw+ (2013)	bll	BLLAC	0	-
J0713.0 + 5738	GB6 J0713 + 5738	108.2689	+57.6361	0.600	Table A2	bcu	UNCL	1	-
J0713.5 + 2537	NVSS J071336 + 254016	108.4030	+25.6714	-	-	bcu	UNCL	3	-
J0713.8 + 1935	MG2 J071354 + 1934	108.4820	+19.5834	0.540	Shaw+ (2009)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0714.4 + 1110	NVSS J071416 + 110830	108.5691	+11.1417	1.00	Table A2	bcu	UNCL	1	-
J0715.3 − 6828	PMN J0715 − 6829	108.7896	−68.4995	-	-	bcu	UNCL	3	-
J0715.6 − 4528	SUMSS J071544 − 453031	108.9363	−45.5085	0.175	Table A2	bll	UNCL	1	-
J0717.7 − 5519	1RXS J071745.4 − 552024	109.4378	−55.3394	-	-	bcu	UNCL	3	-
J0718.0 + 4536	S4 0714 + 45	109.4661	+45.6342	0.943	Stickel+Kühr (1994)	fsrq	FSRQ	0	-
J0718.6 − 4319	PMN J0718 − 4319	109.6818	−43.3305	-	-	bll	BLLAC	2	Shaw+ (2013)
J0719.1 − 7055	1RXS J071910.3 − 705411	109.7859	−70.9010	0.339	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0719.3 + 3307	B2 0716 + 33	109.8309	+33.1194	0.779	White+ (2000)	fsrq	CLAGN	0	Likely a changing-look AGN, because early observations reported a featureless spectrum (Wills+ (1986)).
J0719.7 − 4012	1RXS J071939.2 − 401153	109.9133	−40.1965	0.223	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J0720.0 − 6237	PMN J0719 − 6218	109.7686	−62.3007	1.25	Titov+ (2013)	bcu	FSRQ	0	There is a discrepancy between SIMBAD and NED coordinates (the two positions are $\sim 8'$ distant each other). The source corresponding to the coordinates given in the 4FGL is that of NED.
J0721.9 + 7120	S5 0716 + 71	110.4727	+71.3434	0.31	Nilsson+ (2008)	BLL	BLLAC	1	-
J0722.7 + 3606	MG2 J072255 + 3606	110.7392	+36.1055	0.786	Table A2	bcu	UNCL	1	-
J0723.4 + 5841	RX J0723.2 + 5841	110.8086	+58.6891	0.232	Table A2	bll	UNCL	1	Appenzeller+ (1998) reported a blue galaxy coincident with the radio counterpart and suggest it could be a BL Lac Object, but there are no indication of any optical spectrum.
J0723.5 + 2900	GB6 J0723 + 2859	110.9785	+28.9916	0.966	Shaw+ (2012)	fsrq	FSRQ	0	-
J0723.7 + 2050	GB6 J0723 + 2051	110.9514	+20.8585	0.555	Table A2	bcu	BLLAC	1	Marchesini+ (2019)
J0725.2 + 1425	4C +14.23	111.3200	+14.4205	1.04	Healey+ (2008)	FSRQ	FSRQ	0	-
J0726.1 + 8114	WN B0716.0 + 8119	111.3596	+81.2355	0.119	Table A2	bcu	UNCL	1	-
J0726.4 − 4727	PMN J0726 − 4728	111.6093	−47.4815	1.69	Healey+ (2008)	fsrq	FSRQ	0	-
J0727.1 + 3734	SDSS J072659.51 + 373423.0	111.7480	+37.5731	0.791	Landoni+ (2018)	bll	BLLAC	0	-
J0728.0 + 6735	NVSS J072854 + 673225	112.2236	+67.5410	0.963	Table A2	bcu	UNCL	1	-
J0728.2 + 4827	GB6 J0727 + 4827	111.9994	+48.4557	0.186	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J0728.5 + 6128	GB6 J0729 + 6129	112.3457	+61.4867	0.745	Table A2	bcu	UNCL	1	-
J0729.1 + 5703	TXS 0724 + 571	112.2068	+57.0234	0.424	Vermeulen+Taylor (1995)	fsrq	FSRQ	0	-
J0730.4 + 3308	1RXS J073026.0 + 330727	112.6086	+33.1230	0.112	Bauer+ (2000)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0730.7 − 6602	PMN J0730 − 6602	112.7065	−66.0386	0.106	Klindt+ (2017)	bll	BLLAC	0	-
J0731.9 + 2805	RGB J0731 + 280	112.9697	+28.0758	0.248	Wei+ (1999)	bll	BLLAC	0	SDSS
J0732.7 − 4638	PKS 0731 − 465	113.1846	−46.6714	0.457	Table A2	bcu	UNCL	1	-
J0733.0 + 4915	TXS 0729 + 493	113.2433	+49.2826	0.668	Table A2	bcu	UNCL	1	-
J0733.1 + 5910	GB6 J0733 + 5909	113.2739	+59.1483	0.756	Table A2	bcu	UNCL	1	-
J0733.4 + 5152	NVSS J073326 + 515355	113.3616	+51.8989	0.0650	Becerra González+ (2020)	bcu	BLLAC	0	-
J0733.5 − 5445	SUMSS J073334 − 544544	113.3948	−54.7616	-	-	bcu	UNCL	3	-
J0733.6 + 3649	GB6 J0733 + 3650	113.3516	+36.8346	1.24	Djorgovski+ (2010)	bcu	BLLAC	0	-
J0733.7 + 0205c	4C +02.20	113.4783	+2.0395	-	-	bcu	UNCL	3	-
J0733.7 + 4110	GB6 J0733 + 4111	113.4450	+41.1889	0.599	Table A2	bll	AMB	1	Although there is a SDSS spectrum available, the weak features do not allow to clearly measure the redshift. SDSS gives $z = 0.195$, but Mishra+ (2018), on the basis of the same spectrum, indicate $z = 1.899$, while Massaro+ (2009) give $z = 0.67$ (but, in this case, the origin of this value is not evident). A better, conclusive spectrum is not available.
J0733.8 + 0455	GB6 J0733 + 0456	113.4894	+4.9374	3.01	Healey+ (2008)	fsrq	FSRQ	0	-
J0734.0 + 5021	TXS 0730 + 504	113.4688	+50.3692	0.720	Henstock+ (1997)	fsrq	FSRQ	0	-
J0734.4 − 7711	PKS 0736 − 770	113.6809	−77.1871	-	-	bcu	UNCL	3	-
J0737.3 − 8247	SUMSS J073706 − 824836	114.2754	−82.8111	0.2	Table A2	bcu	UNCL	1	-
J0738.1 + 1742	PKS 0735 + 17	114.5308	+17.7053	0.45	Nilsson+ (2012)	bll	BLLAC	1	It is often found in the literature the value of $z = 0.424$, but this is a lower limit due to the detection of absorption lines (MgII) by Carswell+ (1974).
J0738.4 + 1539	NVSS J073824 + 153839	114.6040	+15.6444	-	-	bcu	UNCL	3	-
J0739.2 + 0137	PKS 0736 + 01	114.8251	+1.6179	0.191	Lynds (1967)	fsrq	FSRQ	0	-
J0739.8 − 6722	1RXS J073928.1 − 672147	114.8671	−67.3631	0.5	Table A2	bcu	UNCL	1	-
J0740.9 + 3203	LEDA 1979979	115.2748	+32.0956	0.179	SDSS	bll	BLLAC	0	-
J0741.0 + 3226	NVSS J074054 + 322600	115.2275	32.4336	0.946	Smith+ (2007)	bll	BLLAC	0	-
J0741.2 − 5140	PMN J0740 − 5137	115.2103	−51.6255	-	-	bcu	UNCL	3	-
J0741.4 − 4709	PMN J0741 − 4709	115.4385	−47.1572	0.765	Healey+ (2008)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0742.1 + 4902	GB6 J0742 + 4900	115.5115	+49.0043	2.31	Jorgenson+ (2006)	fsrq	FSRQ	0	SDSS
J0742.6 + 5443	GB6 J0742 + 5444	115.6658	+54.7402	0.723	Halpern+Eracleous (1997)	fsrq	FSRQ	0	-
J0742.9 − 5242	PMN J0742 − 5241	115.6863	−52.6852	-	-	bcu	UNCL	3	-
J0743.0 − 5622	PMN J0743 − 5619	115.8354	−56.3258	2.32	Healey+ (2008)	fsrq	FSRQ	0	-
J0743.1 + 1713	TXS 0740 + 173	115.7713	+17.2401	0.579	Table A2	bll	BLLAC	1	SDSS
J0743.3 − 4912c	MRC 0741 − 490	115.7690	−49.1703	-	-	bcu	UNCL	3	-
J0744.1 + 7434	MS 0737.9 + 7441	116.0224	+74.5662	0.315	Stocke+ (1991)	bll	BLLAC	0	-
J0744.2 − 6918	PKS 0744 − 691	116.0850	−69.3187	-	-	bcu	BLLAC	2	Peña-Herazo+ (2021)
J0746.0 − 0039	PKS 0743 − 006	116.4753	−0.7382	0.994	White+ (1988)	fsrq	FSRQ	0	Fricke+ (1983) reported a featureless spectrum, thus classifying it as BL Lac Object. However, the position is about 6″ distant from the radio position. The SDSS image shows three close sources, and Fricke's source is the Southern one. White's position is consistent with PKS coordinates.
J0746.3 − 0225	2MASS J07462703 − 0225492	116.6126	−2.4304	0.621	Table A2	bcu	UNCL	1	-
J0746.4 + 2546	B2 0743 + 25	116.6078	+25.8173	2.99	Sambruna+ (2006)	fsrq	FSRQ	0	Extreme MeV blazar. SDSS
J0746.5 + 2730	OI 272	116.6685	+27.5831	0.793	Table A2	fsrq	BLLAC	1	SDSS
J0746.6 − 4754	PMN J0746 − 4755	116.6763	−47.9154	-	-	bll	BLLAC	2	Ricci+ (2015)
J0747.5 + 0905	RX J0747.3 + 0905	116.8425	+9.0968	0.194	Table A2	bll	BLLAC	1	Bauer+ (2000)
J0747.5 − 4927	2MASS J07472476 − 4926332	116.8531	−49.4425	0.405	Table A2	bcu	UNCL	1	-
J0748.3 + 4928	NVSS J074837 + 493040	117.1574	+49.5114	0.748	Table A2	bcu	BLLAC	1	Marchesini+ (2019)
J0748.3 + 8511	NVSS J074715 + 851208	116.8173	+85.2024	0.246	Table A2	bcu	UNCL	1	-
J0748.6 + 2400	OI 275	117.1505	+24.0067	0.410	Stickel+ (1989)	fsrq	FSRQ	0	SDSS
J0749.2 + 2314	RX J0749.2 + 2313	117.3085	+23.2214	0.174	Brinkmann+ (2000)	bll	BLLAC	0	SDSS. Interestingly, Massaro+ (2015) reported a featureless spectrum, likely due to an increased jet activity.
J0749.3 + 4453	SDSS J074916.88 + 445232.1	117.3204	+44.8756	0.559	SDSS	bcu	FSRQ	0	-
J0749.4 + 1058	TXS 0746 + 110	117.3641	+10.9592	0.214	Afanas'ev+ (2005)	bcu	BLLAC	0	-
J0749.6 + 1324	SDSS J074935.95 + 132156.0	117.3998	+13.3656	0.859	Table A2	bcu	UNCL	1	-
J0749.7 + 7450	RX J0749.4 + 7451	117.3732	+74.8624	0.605	Beckmann+ (2003)	bll	BLLAC	0	-
J0749.9 + 1823	TXS 0747 + 185	117.5014	+18.3865	1.16	SDSS	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0750.8 + 1229	OI 280	117.7169	+12.5180	0.889	Wilkes+ (1983)	fsrq	FSRQ	0	-
J0751.0 + 7908	JVAS J0750 + 7909	117.6803	+79.1547	0.543	Table A2	bcu	UNCL	1	-
J0751.0 − 5131	PMN J0751 − 5134	117.7491	−51.5790	0.275	Table A2	bcu	UNCL	1	-
J0751.4 + 2655	MG2 J075139 + 2657	117.9047	+26.9522	0.699	Table A2	bcu	BLLAC	1	SDSS
J0751.4 − 0421	PMN J0751 − 0421	117.8446	−4.3607	0.269	Table A2	bcu	UNCL	1	-
J0752.2 + 3313	OI 380	117.9736	+33.2222	1.94	Schmidt (1977)	fsrq	FSRQ	0	SDSS
J0753.0 + 5353	4C +54.15	118.2558	+53.8832	0.73	Sbarufatti+ (2005)	bll	BLLAC	1	SIMBAD, NED, and other papers reported $z = 0.2$ from Stickel+Kuhr (1993), but this is a lower limit, not a measured value. The most recent spectroscopic observation by Shaw+ (2013) still found no emission lines.
J0753.9 + 0923	TXS 0751 + 095	118.4664	+9.4055	0.923	Table A2	bcu	UNCL	1	-
J0754.0 + 0451	GB6 J0754 + 0452	118.5238	+4.8774	0.733	Table A2	bcu	UNCL	1	-
J0754.7 + 4823	GB1 0751 + 485	118.6903	+48.3974	0.736	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0756.3 − 6431	SUMSS J075625 − 643031	119.1025	−64.5085	0.296	Table A2	bll	UNCL	1	-
J0757.1 + 0956	PKS 0754 + 100	119.2777	+9.9430	0.266	Carangelo+ (2003)	bll	BLLAC	0	-
J0758.1 + 1134	TXS 0755 + 117	119.5319	+11.6128	0.569	Afanas'ev+ (2005)	fsrq	FSRQ	0	SDSS
J0758.7 + 3746	NGC 2484	119.6171	+37.7866	0.041	Colla+ (1975)	rdg	MIS	0	SDSS, FRI/LERG, S0 host galaxy, Owen+Laing (1989)
J0758.9 + 2703	SDSS J075846.99 + 270515.5	119.6958	+27.0877	0.099	SDSS	bll	BLLAC	0	-
J0759.6 + 1321	SDSS J075936.13 + 132117.8	119.9006	+13.3549	0.693	Table A2	bll	BLLAC	1	SDSS
J0800.3 + 5611	1RXS J080017.3 + 561116	120.0647	+56.1854	0.621	Table A2	bcu	UNCL	1	-
J0800.9 + 4401	B3 0757 + 441	120.2845	+44.0195	0.682	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0801.1 + 1335	NVSS J080115 + 133643	120.3127	+13.6118	0.685	Table A2	bll	BLLAC	1	SDSS
J0801.1 + 6444	RX J0801.0 + 6444	120.2594	+64.7471	0.188	Table A2	bll	BLLAC	1	A tentative $z = 0.2$ was proposed by Caccianiga+ (2002).
J0801.3 + 6631	GB6 J0801 + 6639	120.4016	+66.6528	0.681	Table A2	bcu	UNCL	1	-
J0802.0 + 1006	NVSS J080159 + 100535	120.4975	+10.0934	-	-	bll	BLLAC	2	Paiano+ (2017) reported a featureless spectrum, but the coordinates of the observed object are different from those of 4FGL ($\sim$1.7′). Both SDSS (only photometry, classified as a star) and LAMOST reported an optical source at $\sim 3''$ from the 4FGL coordinates. LAMOST spectrum suggests a BLLAC at $z \sim 0.323$ (Hα-[NII] complex at $\sim$ 8700 Å and Ca H+K break at $\sim$ 5200 Å).

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0802.3 − 0942	WISEA J080215.63 − 094250.9	120.5653	−9.7139	-	-	bcu	UNCL	3	-
J0803.0 + 2439	NVSS J080307 + 243749	120.7804	+24.6308	0.722	Table A2	bll	BLLAC	1	SDSS
J0803.2 − 0337	TXS 0800 − 034	120.8003	−3.6002	0.542	Table A2	fsrq	UNCL	1	Chang+ (2019) reported $z = 0.365$ and a BLLAC classification, but it is not clear the origin of this value. Spectroscopic redshift should come from SDSS, but nothing is available on the online archive.
J0803.5 + 2046	GB6 B0800 + 2046	120.7778	+20.6415	2.67	SDSS	bcu	FSRQ	0	-
J0804.5 + 0414	TXS 0802 + 043	121.1813	+4.2361	0.482	Table A2	bcu	UNCL	1	-
J0804.9 − 0624	1RXS J080458.3 − 062432	121.2406	−6.4073	0.3	Table A2	bcu	UNCL	1	-
J0805.0 + 6746	GB6 J0805 + 6745	121.2573	+67.7670	0.740	Table A2	bcu	UNCL	1	-
J0805.1 + 7744	WN B0759.6 + 7744	121.6559	+77.7687	1.57	Table A2	bcu	UNCL	1	-
J0805.2 − 0110	PKS B0802 − 010	121.3037	−1.1872	1.39	Healey+ (2008)	fsrq	FSRQ	0	Jackson+ (2002) give $z = 0.088$ on the basis of the association with the cluster Zw 0802 − 01. However, the radio positions differ by $41''$.
J0805.4 + 6147	TXS 0800 + 618	121.3257	+61.7399	3.03	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J0805.4 + 7534	RX J0805.4 + 7534	121.3610	+75.5736	0.121	Nass+ (1996)	bll	BLLAC	0	-
J0805.9 + 3834	NVSS J080551 + 383538	121.4657	+38.5939	0.576	Table A2	bll	BLLAC	1	SDSS
J0806.1 − 0458	CRATES J080608.79 − 045411.4	121.5366	−4.9032	0.865	Table A2	bcu	UNCL	1	-
J0806.5 + 4503	B3 0803 + 452	121.6395	+45.0756	2.11	Henstock+ (1997)	fsrq	FSRQ	0	SDSS
J0806.5 + 5930	SBS 0802 + 596	121.6081	+59.5186	0.3	Nilsson+ (2003)	bll	BLLAC	1	-
J0807.0 − 6102	PMN J0806 − 6101	121.7054	−61.0250	-	-	bcu	UNCL	3	-
J0807.1 − 0541	PKS 0804 − 05	121.7901	−5.6872	0.837	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0807.2 − 7630	PMN J0807 − 7629	121.8752	−76.4866	0.481	Table A2	bcu	UNCL	1	-
J0807.7 − 1206	CRATES J080736.06 − 120745.9	121.9000	−12.1288	1.10	Table A2	bcu	UNCL	1	-
J0808.2 − 0751	PKS 0805 − 07	122.0647	−7.8527	1.84	White+ (1988)	fsrq	FSRQ	0	-
J0808.5 + 4950	OJ 508	122.1653	+49.8435	1.43	Hewitt+Burbidge (1987)	fsrq	FSRQ	0	Confirmed by SDSS. There are two more values, obviously wrong: $z = 0.351$ from Arp+ (1990) and $z = 0.29$ from Zieba+Chyzy (1991).
J0809.3 + 4053	S4 0805 + 41	122.2361	+40.8791	1.42	Xu+ (1994)	fsrq	FSRQ	0	SDSS
J0809.5 + 5341	87GB 080551.6 + 535010	122.4239	+53.6903	2.14	Healey+ (2008)	fsrq	FSRQ	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0809.6 + 3455	B2 0806 + 35	122.4120	+34.9270	0.082	Marcha+ (1996)	bll	BLLAC	0	SDSS
J0809.8 + 5218	1ES 0806 + 524	122.4549	+52.3162	0.138	Bade+ (1998)	BLL	BLLAC	0	-
J0811.0 − 7529	PMN J0810 − 7530	122.7634	−75.5077	-	-	bll	BLLAC	2	Ackermann+ (2016) give $z = 0.689$, but this is a lower limit from absorption features in the spectrum, as indicated by Shaw+ (2013).
J0811.4 + 0146	OJ 014	122.8613	+1.7812	1.15	Sbarufatti+ (2005)	bll	BLLAC	0	-
J0812.0 + 0237	PMN J0811 + 0237	123.0077	+2.6259	0.173	Paiano+ (2020)	bll	BLLAC	0	-
J0812.3 + 1143	GB6 J0812 + 1141	123.1084	+11.6996	0.463	Table A2	bll	BLLAC	1	SDSS
J0812.5 + 0711	MG1 J081238 + 0712	123.1576	+7.2002	0.908	Table A2	bcu	UNCL	1	-
J0812.6 + 2821	RX J0812.5 + 2820	123.1302	+28.3490	0.909	Table A2	bcu	BLLAC	1	SDSS
J0812.8 + 6507	GB6 J0812 + 6508	123.1702	+65.1531	0.170	Table A2	bll	BLLAC	1	Massaro+ (2015)
J0812.9 + 5555	NVSS J081251 + 555422	123.2144	+55.9060	0.288	Table A2	bll	BLLAC	1	SDSS
J0813.7 − 0356	NVSS J081338 − 035716	123.4086	−3.9548	0.256	Table A2	bcu	UNCL	1	-
J0814.2 − 1013	NVSS J081411 − 101208	123.5487	−10.2029	0.767	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J0814.4 + 2941	RX J0814.4 + 2941	123.6079	+29.6877	0.374	SDSS	bll	FSRQ	0	-
J0814.4 + 6926	1RXS J081407.6 + 692549	123.5317	+69.4304	0.630	Table A2	bcu	UNCL	1	-
J0814.6 + 6430	GB6 J0814 + 6431	123.6633	+64.5228	0.239	Shaw+ (2013)	bll	BLLAC	0	-
J0815.6 + 3641	OJ 230	123.8581	+36.5875	1.03	Mavrides+Mutus (1984)	fsrq	FSRQ	0	SDSS
J0815.9 + 2951	2MASX J08153642 + 2950218	123.9019	+29.8394	0.331	Brand+ (2005)	bcu	BLLAC	0	SDSS. The source is in a sample of radio galaxies, but there is no indication of what type, and the radio spectrum is flat ($\alpha \sim -0.3$).
J0816.1 + 4909	NVSS J081609 + 491005	124.0399	+49.1679	0.371	Table A2	bll	BLLAC	1	SDSS
J0816.3 + 5739	SBS 0812 + 578	124.0947	+57.6525	0.404	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0816.4 − 1311	PMN J0816 − 1311	124.1133	−13.1980	-	-	bll	BLLAC	2	Paiano+ (2020)
J0816.9 + 2050	SDSS J081649.78 + 205106.4	124.2074	+20.8518	0.867	Table A2	bll	BLLAC	1	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0817.1 + 1955	TXS 0814 + 201	124.2729	+19.9786	0.611	Table A2	bcu	AMB	1	The 4FGL indicated as counterpart the radio source CRATES J081705 + 195836, which in turn does not match the coordinates (difference $\sim 10''$). Another radio source matches the coordinates, and we considered it as the counterpart. Glikman+ (2007) reported $z = 0.138$, and also indicated a Sb morphology of the host galaxy. However, Glickman+ (2012) reported for the same source $z = 0.494$ and an identification with a starburst galaxy. The SDSS spectrum matching the 4FGL coordinates displays an evident emission line at $\sim$ 7450 Å, but the identification with Lyα seems unlikely. If it is [OIII], then $z \sim 1.2$ and the absorption at $\sim$ 8600 Å might be the Ca H+K.
J0817.8 + 3243	RX J0817.9 + 3243	124.4625	+32.7279	0.752	Table A2	bll	BLLAC	1	SDSS
J0817.8 − 0934	TXS 0815 − 094	124.4573	−9.5585	0.71	Meisner+Romani (2010)	bll	BLLAC	1	-
J0818.2 + 4222	S4 0814 + 42	124.5667	+42.3793	0.61	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0818.4 + 2816	GB6 J0818 + 2813	124.6140	+28.2341	0.225	SDSS	bll	BLLAC	0	-
J0818.7 + 3153	B2 0815 + 32	124.6669	+31.8967	0.671	Table A2	bll	BLLAC	1	SDSS gives $z = 0.109$ on the basis of one feature identified as Hα. However, the spectrum is quite noisy and the identification rather doubtful.
J0818.8 + 3229	RX J0818.9 + 3227	124.7597	+32.4437	0.651	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS gives $z = 2.017$, but it likely a wrong identification due to the low S/N.
J0819.0 + 2746	5C 07.119	124.8286	+27.7919	0.578	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0819.4 + 4035	GB6 J0819 + 4037	124.8579	+40.6289	0.389	SDSS	bll	BLLAC	0	Véron-Cetty+Véron (2006) give the same value of z, but with reference to White+ (2000), which in turn do not report any z and commented with "uncertain quasar classification".
J0819.4 − 0756	RX J0819.2 − 0756	124.8233	−7.9406	0.299	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J0820.3 + 3639	MG2 J082018 + 3640	125.0841	+36.6679	0.447	Table A2	bll	BLLAC	1	SDSS
J0820.9 + 2353	GB6 J0820 + 2353	125.2133	+23.8959	0.402	SDSS	bll	BLLAC	0	-
J0820.9 − 1258	PKS 0818 − 128	125.2394	−12.9831	0.539	Landoni+ (2013)	bll	BLLAC	0	There are several values of z, likely due to the weakness of the emission features. Landoni+ (2013) reported FWHM(Hβ) = 1100 km/s, but this is likely due to the weakness of the emission line ($EW \sim 0.7$ Å) caused by a high jet activity (see Foschini 2012), rather than a NLS1 nature.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0821.1 + 1007	SDSS J082054.81 + 100609.4	125.2284	+10.1026	0.954	SDSS	bcu	FSRQ	0	-
J0823.1 + 4042	B3 0819 + 408	125.7398	+40.6972	0.865	SDSS	fsrq	FSRQ	0	-
J0823.1 − 6330	1RXS J082316.0 − 632928	125.8108	−63.4917	0.202	Table A2	bll	UNCL	1	-
J0823.3 + 2224	OJ 233	125.8532	+22.3842	0.951	Stickel+ (1991)	bll	BLLAC	0	SDSS
J0824.4 + 2440	B2 0821 + 24	126.1375	+24.6453	1.24	Willot+ (1998)	fsrq	FSRQ	0	-
J0824.7 + 5552	OJ 535	126.1968	+55.8785	1.42	Wills+Wills (1976)	fsrq	FSRQ	0	SDSS
J0824.9 + 3915	4C +39.23	126.2312	+39.2783	1.22	Schmidt (1974)	fsrq	FSRQ	0	Please note that ADS has scanned the first printing of the Schmidt's paper, which do not include the table with the redshifts because of an error, but not the Errata Corrige, where the table is printed. It was necessary to retrieve the correct paper from our local library. There are also data from SDSS.
J0825.8 + 0309	PKS 0823 + 033	126.4597	+3.1568	0.506	Stickel+ (1991)	bll	BLLAC	0	-
J0826.4 − 6404	SUMSS J082627 − 640414	126.6161	−64.0709	0.204	Table A2	bll	UNCL	1	-
J0827.0 − 0708	PMN J0827 − 0708	126.7757	−7.1461	0.120	Table A2	bll	BLLAC	1	6dF. Massaro+ (2013) reported $z = 0.12$, but the origin is unknown. They cited 6dF, which in turn is featureless ($z \sim 0$, quality factor 1). Another value of $z = 0.247$ is given by 3FGL (Ackermann+ (2015)), but—again—the origin is unknown. In addition, 3FGL classified this source as bcu, which should be unlikely once you have the optical spectrum.
J0827.8 + 5221	TXS 0824 + 524	126.9737	+52.2995	0.338	Hook+ (1996)	fsrq	FSRQ	0	SDSS
J0828.0 + 2307	NVSS J082801 + 231215	127.0048	+23.2049	0.24	Brand+ (2005)	bll	BLLAC	1	-
J0828.3 + 4152	B3 0824 + 420	127.0592	+41.8977	0.226	Wei+ (1999)	bll	BLLAC	0	SDSS. Steep radio spectrum: MIS?
J0828.6 − 0747	NVSS J082854 − 074854	127.2270	−7.8152	0.415	Table A2	bcu	UNCL	1	-
J0829.0 + 1755	TXS 0826 + 180	127.2701	+17.9044	0.0894	Bauer+ (2000)	bll	MIS	0	SDSS. Miraghei+Best (2017) indicated a FRI morphology.
J0829.4 + 0857	TXS 0826 + 091	127.3763	+8.9726	0.866	Landt+ (2001)	fsrq	MIS	0	Landt+ (2001) indicated a steep radio spectrum, confirmed also by `specfind`, and classified is as SSRQ.
J0829.6 − 1140	NVSS J082939 − 114103	127.4132	−11.6843	0.386	Table A2	bcu	UNCL	1	-
J0829.7 − 5856	PMN J0829 − 5856	127.3799	−58.9335	-	-	bcu	UNCL	3	-
J0830.0 + 5231	RX J0830.1 + 5230	127.5455	+52.5075	0.206	SDSS	bcu	BLLAC	0	-
J0830.1 − 0946	1RXS J083014.6 − 094455	127.5631	−9.7488	0.5	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0830.8 + 2410	S3 0827 + 24	127.7170	+24.1833	0.941	Steidel+Sargent (1991)	FSRQ	FSRQ	0	SDSS
J0831.4 + 2631	MG2 J083121 + 2629	127.8264	+26.5070	1.05	Table A2	bcu	UNCL	1	-
J0831.5 + 1747	GB6 J0831 + 1746	127.8877	+17.7752	0.539	Table A2	bll	BLLAC	1	SDSS
J0831.8 + 0429	PKS 0829 + 046	127.9537	+4.4942	0.174	Falomo (1991)	bll	BLLAC	0	SDSS
J0832.2 + 2753	OJ 250	128.0819	+27.8789	0.255	Table A2	bcu	UNCL	1	Wills+Wills (1976) indicated a M-type star, but no spectrum published. No other spectra have been published.
J0832.4 + 4912	OJ 448	128.0967	+49.2225	0.548	Stickel+ (1993)	bll	BLLAC	0	-
J0833.4 − 0458	PMN J0833 − 0454	128.3270	−4.9165	3.45	Paliya+ (2020)	fsrq	FSRQ	0	-
J0833.9 + 4223	OJ 451	128.4745	+42.4005	0.249	Henstock+ (1997)	fsrq	CLAGN	0	SDSS shows evident emission lines. On the opposite, LAMOST spectra are quite noisy, but the Hα seems to be confirmed, although much weaker than SDSS spectrum (1, 2, 3). Likely a changing-look AGN: also Hook+ (1996) found a noisy and featureless spectrum before Henstock.
J0834.6 + 4402	B3 0831 + 442	128.7425	+44.0606	0.518	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0835.0 + 6243	GB6 J0834 + 6249	128.7258	+62.8302	1.63	Table A2	bcu	UNCL	1	-
J0835.2 − 2243	PMN J0834 − 2241	128.6842	−22.6869	1.06	Healey+ (2008)	fsrq	FSRQ	0	-
J0835.7 + 0936	GB6 J0835 + 0936	128.9301	+9.6217	0.544	Table A2	bll	BLLAC	1	SDSS
J0836.2 + 2141	MG2 J083615 + 2138	129.0676	+21.6510	0.776	Table A2	bcu	UNCL	1	-
J0836.5 − 2026	PKS 0834 − 20	129.1634	−20.2832	2.75	Fricke+ (1983)	fsrq	FSRQ	0	-
J0837.3 + 1458	RGB J0837 + 149	129.3530	+14.9722	0.278	SDSS	bll	BLLAC	0	-
J0839.4 + 1803	TXS 0836 + 182	129.8780	+18.0464	0.28	Abraham+ (1991)	bll	BLLAC	1	-
J0839.7 + 3540	NVSS J083943 + 354001	129.9307	+35.6671	0.546	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0839.8 + 0105	PKS 0837 + 012	129.9567	+1.0741	1.12	Owen+ (1995)	fsrq	FSRQ	0	-
J0840.8 + 1317	3C 207	130.1983	+13.2065	0.680	Lynds (1967)	ssrq	MIS	0	FRII, HERG, steep radio spectrum Laing+ (1983). SDSS.
J0841.3 + 7053	4C +71.07	130.3515	+70.8950	2.17	Stickel+ (1989)	FSRQ	FSRQ	0	-
J0842.3 − 6053	PMN J0842 − 6053	130.6107	−60.8973	-	-	bcu	UNCL	3	-
J0842.5 + 0251	NVSS J084225 + 025251	130.6063	+2.8813	0.425	SDSS	bll	BLLAC	0	The SDSS spectrum is rather noisy, but the redshift was confirmed by observations at NTT by Kügler+ (2014).
J0842.7 + 6656	TXS 0838 + 671	130.6800	+66.9581	0.121	de Menezes+ (2020)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0843.0 − 0853	PMN J0843 − 0848	130.8888	−8.8162	1.21	Table A2	bcu	UNCL	1	-
J0844.2 + 5312	NVSS J084411 + 531250	131.0487	+53.2141	0.360	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0845.4 + 0442	MG1 J084516 + 0439	131.3214	+4.6632	0.597	Table A2	bcu	UNCL	1	-
J0846.5 − 2609	TXS 0844 − 259	131.7359	−26.1307	-	-	bcu	UNCL	3	-
J0846.9 + 4608	WISE J084734.29 + 460928.0	131.8929	+46.1578	1.22	SDSS	fsrq	FSRQ	0	-
J0847.0 − 2336	PMN J0847 − 2337	131.7565	−23.6171	0.059	Shaw+ (2013)	bcu	BLLAC	0	-
J0847.2 + 1134	RX J0847.1 + 1133	131.8039	+11.5639	0.198	Cao+ (1999)	bll	BLLAC	0	SDSS
J0847.9 − 0702	TXS 0845 − 068	131.9864	−7.0547	0.440	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0848.0 − 0524	PKS 0845 − 051	131.9947	−5.3428	1.24	Wright+ (1979)	fsrq	FSRQ	0	-
J0848.7 + 0508	SDSS J084839.66 + 050617.8	132.1653	+5.1050	0.305	Table A2	bll	BLLAC	1	Masetti+ (2013)
J0848.7 + 7017	GB6 J0848 + 7017	132.1646	+70.2910	0.810	Table A2	bcu	BLLAC	1	Paiano+ (2019)
J0848.9 + 0205	PMN J0849 + 0206	132.2867	+2.1062	0.636	Table A2	bll	BLLAC	1	SDSS
J0849.1 + 6607	GB6 J0848 + 6605	132.2276	+66.1026	0.094	Table A2	bll	BLLAC	1	Massaro+ (2015)
J0849.5 + 0456	TXS 0846 + 051	132.3856	+4.9188	0.531	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0850.0 + 4855	GB6 J0850 + 4855	132.5015	+48.9163	0.442	Table A2	bll	BLLAC	1	SDSS
J0850.0 + 5108	SBS 0846 + 513	132.4916	+51.1414	0.584	Zhou+ (2005)	NLSY1	NLS1	0	SDSS
J0850.1 − 1212	PMN J0850 − 1213	132.5401	−12.2265	0.566	Halpern+Eracleous (1997)	fsrq	FSRQ	0	-
J0850.5 + 3455	RX J0850.5 + 3455	132.6508	+34.9230	0.145	Brinkmann+ (2000)	bll	BLLAC	0	SDSS
J0851.5 + 5528	GB6 J0851 + 5528	132.8997	+55.4762	0.569	Table A2	bll	BLLAC	1	SDSS
J0852.2 + 2834	B2 0849 + 28	133.0215	+28.5666	1.29	Stocke+ (1983)	fsrq	FSRQ	0	SDSS
J0854.0 + 2753	SDSS J085410.16 + 275421.7	133.5424	+27.9060	0.494	SDSS	bll	BLLAC	0	-
J0854.3 + 4408	B3 0850 + 443	133.5412	+44.1417	0.093	Table A2	bll	BLLAC	1	SDSS
J0854.8 + 2006	OJ 287	133.7036	+20.1085	0.306	Miller+ (1978)	BLL	BLLAC	0	Miller's value (tentative) was later confirmed by Sitko+Junkkarinen (1985) during an observation with the jet in low state.
J0855.4 − 0714	PKS 0852 − 07	133.7895	−7.2508	0.827	Table A2	bcu	UNCL	1	-
J0855.9 + 7144	GB6 J0856 + 7146	134.2286	+71.7733	0.541	Pursimo+ (2013)	fsrq	FSRQ	0	-
J0856.6 − 1105	PMN J0856 − 1105	134.1742	−11.0873	1.20	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0856.8 + 2056	TXS 0853 + 211	134.1656	+20.9621	0.376	Table A2	bll	BLLAC	1	Shaw+ (2013)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0856.8 + 8559	NVSS J085740 + 860344	134.4231	+86.0624	0.679	Table A2	bcu	UNCL	1	-
J0857.7 + 0137	RX J0857.8 + 0135	134.4575	+1.5918	0.281	SDSS	bll	BLLAC	0	-
J0857.9 − 1949	PKS 0855 − 19	134.5223	−19.8436	0.660	White+ (1988)	fsrq	FSRQ	0	-
J0858.1 + 1405	3C 212	134.6727	+14.1624	1.05	SDSS	ssrq	MIS	0	FRII according to Laing+ (1983).
J0859.4 + 6218	1RXS J085930.5 + 621737	134.8777	+62.2918	0.920	SDSS	bll	BLLAC	0	-
J0859.4 + 8345	1RXS J085916.5 + 834450	134.7921	+83.7511	0.327	Beckmann+ (2003)	bll	BLLAC	0	-
J0900.6 − 7408	AT20G J085959 − 741401	134.9971	−74.2336	0.3	Table A2	bcu	UNCL	1	-
J0900.7 − 1243	TXS 0858 − 125	135.1657	−12.7091	0.478	Table A2	bcu	UNCL	1	-
J0901.2 + 6742	TXS 0856 + 679	135.1611	+67.7065	0.970	Table A2	bll	BLLAC	1	Massaro+ (2015)
J0901.4 + 4542	NVSS J090208 + 454433	135.5331	+45.7425	0.288	SDSS	bll	BLLAC	0	-
J0901.5 + 6711	1RXS J090140.8 + 671158	135.4200	+67.1996	0.566	Table A2	bcu	UNCL	1	-
J0902.4 + 2051	NVSS J090226 + 205045	135.6121	+20.8462	0.56	Table A2	bll	BLLAC	1	SDSS
J0902.4 + 6440	GB6 J0902 + 6444	135.7258	+64.7441	1.16	Table A2	bcu	BLLAC	1	SDSS
J0903.1 + 4652	S4 0859 + 47	135.7666	+46.8511	1.46	Lawrence+ (1996)	fsrq	FSRQ	0	SDSS
J0904.0 + 2724	B2 0900 + 27	135.8876	+27.3244	1.72	SDSS	bcu	FSRQ	0	-
J0904.6 + 4238	4C +42.28	136.0651	+42.6347	1.34	SDSS	fsrq	FSRQ	0	-
J0905.6 + 1358	MG1 J090534 + 1358	136.3958	+13.9684	0.224	Paiano+ (2020)	bll	BLLAC	0	-
J0906.2 − 1707	CRATES J0906 − 1706	136.5905	−17.1068	0.412	Table A2	bcu	UNCL	1	-
J0906.3 − 0905	PMN J0906 − 0905	136.5752	−9.0958	0.863	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0906.7 + 4950	87GB 090322.8 + 500444	136.7146	+49.8767	1.64	Glikman+ (2004)	fsrq	FSRQ	0	SDSS
J0908.9 + 2311	RX J0908.9 + 2311	137.2526	+23.1869	0.432	Rosa-González+ (2017)	bll	BLLAC	0	-
J0909.1 + 0121	PKS 0906 + 01	137.2920	+1.3599	1.02	Burbidge+Strittmatter (1972)	fsrq	FSRQ	0	SDSS
J0909.6 + 0159	PKS 0907 + 022	137.4160	+2.0015	1.75	Ching+ (2017)	bll	BLLAC	0	-
J0909.7 + 3104	B2 0906 + 31	137.4720	+31.1009	0.272	Bauer+ (2000)	bll	BLLAC	0	SDSS
J0909.7 − 0230	PKS 0907 − 023	137.4372	−2.5251	0.957	Wills+Lynds (1978)	fsrq	FSRQ	0	-
J0910.0 + 4257	3C 216	137.3896	+42.8962	0.670	Smith+Spinrad (1980)	css	CLAGN	0	CSS/HERG, see Barthel+ (1988) and Best+Heckman (2012). Schmidt (1968) reported a featureless spectrum, implying a changing-look AGN. SDSS, LAMOST.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0910.6 + 2247	TXS 0907 + 230	137.6756	+22.8099	2.68	Healey+ (2008)	fsrq	FSRQ	0	SDSS
J0910.6 + 3329	Ton 1015	137.6543	+33.4901	0.608	Table A2	bll	BLLAC	1	Paiano+ (2020). Please note an error in the CDS catalog of Bauer+ (2000), which affected also the entries in SIMBAD and NED databases: it is written $z = 0.354$, but the note reported a featureless spectrum.
J0910.8 + 3859	FBQS J091052.0 + 390202	137.7168	+39.0339	0.199	SDSS	bll	BLLAC	0	-
J0911.7 + 3349	MG2 J091151 + 3349	137.9490	+33.8213	0.456	SDSS	bll	BLLAC	0	-
J0912.2 + 2800	RX J0912.2 + 2759	138.0467	+27.9911	0.903	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0912.2 + 4127	B3 0908 + 416B	138.0484	+41.4359	2.57	Shaw+ (2012)	fsrq	FSRQ	0	SDSS
J0912.2 − 2751	PMN J0912 − 2752	138.1316	−27.8714	1.75	Table A2	bcu	UNCL	1	-
J0912.5 + 1556	NVSS J091230 + 155529	138.1275	+15.9244	0.212	Bauer+ (2000)	bll	BLLAC	0	Warning: the 4FGL indicated RX J0912.5 + 1555 as counterpart, but this X-ray source is usually associated with the cluster Abell 763 ($z = 0.0851$). The closest radio source and the most likely counterpart is NVSS J091230 + 155529 (distant $\sim 5''$ from the 4FGL coordinates), which is a background BL Lac not associated with the cluster.
J0912.9 − 2102	MRC 0910 − 208	138.2509	−21.0558	0.198	Jones+ (2009)	bll	BLLAC	0	Although the quality flag of the 6dF spectrum is 3 (reliable $> 90\%$), the Ca H&K break is clearly visible.
J0913.3 + 8133	1RXS J091324.6 + 813318	138.3350	+81.5517	0.639	Beckmann+ (2003)	bll	BLLAC	0	-
J0914.1 − 0202	1RXS J091407.9 − 015949	138.5344	−1.9959	0.519	Table A2	bcu	UNCL	1	-
J0914.4 + 0249	PKS 0912 + 029	138.6580	+2.7665	0.427	Drinkwater+ (1997)	fsrq	FSRQ	0	SDSS
J0915.4 − 3027	PMN J0915 − 3030	138.9204	−30.4971	-	-	bcu	UNCL	3	-
J0915.9 + 2933	Ton 396	138.9683	+29.5567	0.035	Table A2	bll	BLLAC	1	Paiano+ (2017)
J0916.7 + 3856	4C +38.28	139.2038	+38.9078	1.268	Allington-Smith+ (1988)	fsrq	FSRQ	0	SDSS
J0916.7 + 5238	RX J0916.8 + 5238	139.2164	+52.6412	0.190	Nass+ (1996)	bll	BLLAC	0	SDSS
J0917.1 − 2131	PKS 0915 − 213	139.3626	−21.5262	0.847	Wright+ (1979)	fsrq	FSRQ	0	-
J0917.3 − 0342	NVSS J091714 − 034315	139.3108	−3.7207	0.308	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J0918.9 − 0625	PMN J0918 − 0628	139.6665	−6.4747	0.783	Table A2	bcu	UNCL	1	-
J0919.3 − 2202	1RXS J091926.5 − 220052	139.8593	−22.0119	0.491	Table A2	bcu	UNCL	1	-
J0920.3 − 0443	TXS 0917 − 044	140.1234	−4.6599	0.896	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0920.9 + 4441	S4 0917 + 44	140.2436	+44.6983	2.188	Hewitt+Burbidge (1987)	fsrq	FSRQ	0	SDSS. Complex radio morphology (core+lobe, jet bending $\sim 60^{\circ}$, Neff+Hutchings (1990)), but flat radio spectrum and superluminal motion ($\beta_{\rm app} \sim 13c$) according to the MOJAVE project.
J0920.9 − 2256	NVSS J092057 − 225721	140.2395	−22.9560	0.181	Table A2	bll	UNCL	1	-
J0921.6 + 6216	OK 630	140.4010	+62.2645	1.447	Stickel+Kühr (1993)	fsrq	FSRQ	0	SDSS
J0921.7 + 2336	NVSS J092145 + 233548	140.4391	+23.5967	0.555	Table A2	bll	BLLAC	1	SDSS
J0922.4 − 0528	TXS 0919 − 052	140.5986	−5.4853	0.974	Healey+ (2008)	fsrq	AMB	0	Healey+ (2008) classified it as NLRG, because of FWHM$\lesssim$ 1000 km/s (no images of the optical spectrum are available), but the radio spectrum is flat (from NED, $\alpha_{74\ \rm MHz\ -\ 22\ GHz} \sim 0.3$). Perhaps SEY?
J0922.6 + 0434	GB6 J0922 + 0433	140.6136	+4.5608	0.656	Table A2	bcu	UNCL	1	-
J0922.6 + 4454	NVSS J092235 + 445749	140.6459	+44.9636	0.457	SDSS	bcu	SEY	0	Deller+Middleberg (2014) reported a compact radio source. Radio spectrum is flat.
J0923.5 + 3852	B2 0920 + 39	140.8102	+38.8278	0.79	Table A2	bcu	UNCL	1	-
J0923.5 + 4125	B3 0920 + 416	140.8804	+41.4243	1.73	Shaw+ (2012)	fsrq	FSRQ	0	Some differences in redshift measurements: the first observation (Hook+ 1996) resulted in a featureless spectrum; then, Falco+ (1998) reported a galaxy-dominated spectrum at $z = 0.028$, on the basis of Hα and [OIII] (plus weak Hβ and Ca H&K), but there was no spectrum published. The SDSS spectrum is quite noisy, but similar to that published by Shaw+ (2012). The featureless spectrum reported by Hook+ (1996) seems to be due to low S/N rather than a real change of classification.
J0924.0 + 0534	RBS 771	141.0043	+5.5626	0.432	Table A2	bll	BLLAC	1	SDSS and LAMOST inconclusive. Piranomonte+ (2007) reported a featureless spectrum and set $z > 0.65$. Chang+ (2019) reported a firm redshift of $z = 0.57$, but no spectrum was published. It seems the value of the automatic pipeline of SDSS DR3, which is unreliable because the spectrum is featureless and noisy.
J0924.0 + 2816	B2 0920 + 28	140.9647	+28.2570	0.744	SDSS	fsrq	FSRQ	0	-
J0925.7 + 3126	B2 0922 + 31B	141.4319	+31.4530	0.26	Tinti+de Zotti (2006)	bll	BLLAC	1	-
J0925.7 + 5959	NVSS J092542 + 595812	141.4287	+59.9713	1.18	Table A2	bll	BLLAC	1	SDSS
J0926.4 + 5412	NVSS J092638 + 541126	141.6620	+54.1907	0.608	Table A2	bll	BLLAC	1	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0927.2 + 2454	MG2 J092720 + 2456	141.8453	+24.9370	0.649	Table A2	bcu	BLLAC	1	SDSS
J0928.1 − 2035	PKS 0925 − 203	141.9659	−20.5809	0.347	Peterson+ (1979)	fsrq	FSRQ	0	6dF
J0928.2 − 3048	PKS 0926 − 306	142.1416	−30.8289	-	-	bcu	UNCL	3	-
J0928.4 − 0415	PKS B0926 − 039	142.1395	−4.1525	0.733	Table A2	bcu	UNCL	1	-
J0928.5 + 4048	1RXS J092837.8 + 404858	142.1560	+40.8126	0.747	Table A2	bll	BLLAC	1	SDSS
J0928.7 − 3529	NVSS J092849 − 352947	142.2076	−35.4969	-	-	bll	UNCL	3	-
J0929.3 + 5014	GB6 J0929 + 5013	142.3143	+50.2267	0.339	Table A2	bll	BLLAC	1	SDSS. A value of $z = 0.37$ is often found in the literature, but it is one of the early measurement from the SDSS DR3: unreliable.
J0929.3 − 2414	NVSS J092928 − 241632	142.3677	−24.2758	0.208	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0929.6 + 4621	SDSS J092922.75 + 462046.4	142.3448	+46.3462	0.439	Table A2	bcu	UNCL	1	-
J0930.3 + 8612	S5 0916 + 864	142.4294	+86.2059	1.35	Table A2	bll	BLLAC	1	Shaw+ (2013)
J0930.5 + 4951	1ES 0927 + 500	142.6566	+49.8404	0.187	Perlman+ (1996)	bll	BLLAC	0	SDSS
J0930.7 + 3502	B2 0927 + 35	142.7303	+35.0604	0.977	Table A2	bll	BLLAC	1	Caccianiga+ (2002)
J0930.9 + 0033	PKS 0928 + 008	142.7177	+0.5830	1.77	SDSS	fsrq	FSRQ	0	Early estimation was $z = 0.505$ by Jauncey+ (1984), who identified a line at 4211 Å as MgII. The SDSS spectrum shows that instead it is CIV. Other lines in the spectrum support this finding.
J0930.9 − 1015	TXS 0928 − 099	142.7613	−10.2236	0.536	Table A2	bcu	UNCL	1	-
J0931.2 − 8533	PKS 0936 − 853	142.6357	−85.5666	0.205	Table A2	bcu	UNCL	1	-
J0931.9 + 6737	SDSS J093156.88 + 673652.9	142.9870	+67.6147	0.660	SDSS	rdg	BLLAC	0	4FGL associated this source to the radio galaxy NGC 2892, which is $\sim 5'$ distant from the coordinates of the proposed counterpart. We considered valid the RA and Dec of the counterpart, corresponding to the SDSS source.
J0932.6 + 5306	S4 0929 + 53	143.1715	+53.1094	0.597	Stickel+Kuhr (1994)	fsrq	NLS1	0	FWHM(Hβ)$\sim$ 1897 km/s (Rakshit+ (2017)). SDSS
J0932.7 + 1041	NVSS J093239 + 104231	143.1640	+10.7098	0.361	SDSS	bll	BLLAC	0	-
J0934.3 + 3926	GB6 J0934 + 3926	143.5278	+39.4423	0.748	Table A2	bll	BLLAC	1	SDSS
J0934.5 − 1720	RXC J0934.4 − 1721	143.6257	−17.3560	0.250	Bauer+ (2000)	bll	BLLAC	0	-
J0935.3 − 1736	NVSS J093514 − 173658	143.8116	−17.6163	0.340	Table A2	bll	BLLAC	1	Desai+ 2019
J0936.3 − 2111	TXS 0933 − 209	144.0562	−21.1952	0.699	Table A2	bll	UNCL	1	-
J0936.5 + 1847	GB6 J0936 + 1850	144.1153	+18.8343	0.561	Table A2	bll	BLLAC	1	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0937.1 + 5008	GB6 J0937 + 5008	144.3014	+50.1478	0.276	Henstock+ (1997)	fsrq	SEY	0	SDSS. Rakshit+ (2017) classified it as NLS1, with FWHM(Hβ) $\sim$ 1866 km/s and weak FeII. However, Henstock+ (1997) reported FWHM(Hβ) $\sim$ 4105 km/s, and also Shaw+ (2012) measured a broad FWHM(Hβ) $\sim$ 3400 km/s on the same SDSS spectrum. The Hβ profile is distorted at its base and there is significant noise. It seems more an intermediate Seyfert.
J0937.9 − 1434	NVSS J093754 − 143350	144.4780	−14.5640	0.287	Paiano+ (2017)	bll	BLLAC	0	-
J0939.3 − 1732	TXS 0936 − 173	144.8300	−17.5266	1.831	Krogager+ (2018)	bcu	FSRQ	0	-
J0940.0 − 2828	TXS 0937 − 282	145.0204	−28.4916	-	-	bcu	UNCL	3	-
J0940.4 + 6148	RX J0940.3 + 6148	145.0936	+61.8073	0.211	Bauer+ (2000)	bll	BLLAC	0	SDSS
J0940.9 − 1335	TXS 0938 − 133	145.2606	−13.5975	0.551	Healey+ (2008)	fsrq	FSRQ	0	-
J0941.7 + 4125	GB6 J0941 + 4121	145.4569	+41.3513	0.816	White+ (2000)	bcu	FSRQ	0	SDSS
J0941.9 + 2724	GB6 J0941 + 2721	145.4684	+27.3716	0.546	Table A2	bll	BLLAC	1	In the 2LAC the source is identified as fsrq with $z = 1.254$, but in the more recent version of the catalog, the source is identified as bll without redshift. SDSS spectrum is inconclusive, but at least it favors a BLLAC identification.
J0942.3 + 2842	NVSS J094223 + 284413	145.5971	+28.7373	0.366	SDSS	bll	BLLAC	0	-
J0942.3 − 0800	PMN J0942 − 0800	145.5894	−7.9981	0.531	Table A2	bll	BLLAC	1	Álvarez Crespo+ 2016
J0943.7 + 6137	FIRST J094420.3 + 613550	146.0852	+61.5973	0.791	SDSS	bcu	FSRQ	0	-
J0944.2 + 5557	NVSS J094441 + 555752	146.1728	+55.9647	0.423	Table A2	bll	BLLAC	1	SDSS
J0945.2 + 5200	WISE J094452.09 + 520233.4	146.2173	+52.0428	0.563	Walsh+ (1984)	fsrq	FSRQ	0	SDSS
J0945.5 + 4635	B3 0942 + 468	146.4254	+46.6141	0.639	Britzen+ (2007)	fsrq	MIS	0	SDSS. Healey+ (2008) also performed optical spectroscopy and confirmed the value of z, but they classified it as fsrq. Britzen+ (2007) have also analyzed radio data (VLA), which allowed them to estimate the viewing angle $\theta \sim 66^\circ$ and $\beta_{app} \sim 1.5$.
J0945.7 + 5759	GB6 J0945 + 5757	146.4260	+57.9632	0.229	SDSS	bll	BLLAC	0	SDSS shows another object with the same redshift at $\sim 5''$ ($\sim$19 kpc), but with a redder spectrum and no radio counterpart. No specific publication was found in the literature. Interacting galaxies?
J0946.0 + 4735	RX J0946.0 + 4735	146.5186	+47.5862	0.575	Table A2	bll	BLLAC	1	SDSS
J0946.2 + 0104	1RXS J094620.5 + 010459	146.5842	+1.0811	0.577	SDSS	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0946.6 + 1016	TXS 0943 + 105	146.6461	+10.2850	1.004	Afanas'ev+ (2003)	fsrq	FSRQ	0	SDSS
J0947.1 − 2541	1RXS J094709.2 − 254056	146.7897	−25.6833	-	-	bll	UNCL	3	-
J0947.6 + 2215	TXS 0944 + 225	146.9108	+22.2593	0.498	Table A2	bll	BLLAC	1	SDSS
J0947.9 + 1121	NVSS J094746 + 112020	146.9412	+11.3392	0.187	SDSS	bll	BLLAC	0	-
J0948.6 − 0338	PMN J0948 − 0338	147.1836	−3.6404	0.882	Table A2	bcu	UNCL	1	-
J0948.9 + 0022	PMN J0948 + 0022	147.2388	+0.3738	0.584	Williams+ (2002)	NLSY1	NLS1	0	SDSS
J0949.0 + 4038	4C +40.24	147.2306	+40.6624	1.25	Wills+Wills (1976)	fsrq	FSRQ	0	SDSS
J0949.2 + 1749	TXS 0946 + 181	147.4157	+17.8804	0.693	SDSS	fsrq	FSRQ	0	-
J0949.7 + 5819	87GB 094609.3 + 583301	147.4159	+58.3203	1.42	SDSS	bcu	FSRQ	0	-
J0950.2 + 0615	GB6 J0950 + 0615	147.5144	+6.2511	0.615	Table A2	bll	BLLAC	1	SDSS inconclusive. Ching+ (2017) reported an uncertain $z = 0.244$ from Drinkwater+ (2010), which in turn does not contain the source.
J0950.2 + 4553	RX J0950.2 + 4553	147.5492	+45.8889	0.409	Table A2	bll	BLLAC	1	SDSS
J0952.1 + 3932	RX J0952.2 + 3936	148.0613	+39.6044	0.777	Table A2	bll	BLLAC	1	SDSS
J0952.2 + 7503	RBS 804	148.1006	+75.0371	0.181	Bauer+ (2000)	bll	BLLAC	0	-
J0952.8 + 0712	SDSS J095249.57 + 071329.9	148.2066	+7.2250	0.574	Paiano+ (2017)	bll	BLLAC	0	-
J0953.0 − 0840	PMN J0953 − 0840	148.2613	−8.6718	0.743	Table A2	bll	BLLAC	1	Paiano+ (2020)
J0953.4 − 7659	RX J0953.1 − 7657	148.2681	−76.9672	0.109	Peña-Herazo+ (2021)	bcu	BLLAC	0	-
J0954.2 + 4913	1ES 0950 + 495	148.5408	+49.2497	0.207	Morris+ (1991)	bll	BLLAC	1	-
J0955.1 + 3551	1RXS J095508.2 + 355054	148.7828	+35.8502	0.557	Paiano+ (2020)	bll	BLLAC	0	Possible neutrino source.
J0955.2 + 0835	NVSS J095501 + 083342	148.7578	+8.5617	0.630	Table A2	bll	BLLAC	1	SDSS
J0956.0 + 3936	WISE J095608.57 + 393515.8	149.0357	+39.5878	1.173	Vigotti+ (1997)	fsrq	FSRQ	0	SDSS
J0956.5 − 0958	1RXS J095627.2 − 095720	149.1176	−9.9553	0.161	Grazian+ (2002)	bll	BLLAC	0	-
J0956.7 + 2516	OK 290	149.2078	+25.2545	0.708	Burbidge+Strittmatter (1972)	fsrq	FSRQ	0	SDSS
J0957.3 − 1348	PMN J0957 − 1350	149.3258	−13.8337	1.32	Healey+ (2008)	fsrq	FSRQ	0	-
J0957.6 + 5523	4C +55.17	149.4091	+55.3827	0.903	Wills+Wills (1974)	fsrq	FSRQ	0	SDSS. Double peaked Hβ and other lines with evident red wings.
J0957.8 + 3423	B2 0954 + 34	149.4437	+34.3709	0.279	Table A2	bcu	BLLAC	1	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J0958.0 + 3222	3C 232	149.5873	+32.4006	0.531	Wills (1966)	fsrq	NLS1	0	SDSS. Phillips (1978) reported the typical NLS1 spectrum (FWHM(Hβ) $\sim$ 1360 km/s, bump FeII), but at that epoch the classification was not yet invented. Boksenberg+Sargent (1978) reported Ca H&K absorption features in the spectrum of 3C 232, which are due to the nearby ($\sim$2′) spiral galaxy NGC 3067.
J0958.0 + 4728	OK 492	149.5820	+47.4188	1.88	Burbidge+ (1977)	fsrq	FSRQ	0	SDSS
J0958.0 − 0319	1RXS J095806.4 − 031729	149.5250	−3.2945	0.554	Table A2	bll	BLLAC	1	Piranomonte+ (2007)
J0958.1 − 6753	1RXS J095812.8 − 675241	149.5544	−67.8785	0.174	Table A2	bcu	UNCL	1	-
J0958.3 − 2656	NGC 3078	149.6025	−26.9267	0.00828	Humason+ (1956)	rdg	AMB	0	Compact radio core, flat radio spectrum. It is indicated as radiogalaxy in the 4FGL, but the radio properties are not those of a radiogalaxy. No optical spectrum was published.
J0958.4 + 5042	7C 0955 + 5054	149.6575	+50.6660	1.15	Hook+ (1996)	fsrq	FSRQ	0	SDSS
J0958.4 − 2441	TXS 0956 − 244	149.5853	−24.7332	0.986	Table A2	bcu	UNCL	1	-
J0958.7 + 6534	S4 0954 + 65	149.6969	+65.5652	0.368	Lawrence+ (1986)	BLL	BLLAC	0	-
J0958.8 + 7039	GB6 J0958 + 7039	149.7076	+70.6665	0.239	Table A2	bcu	UNCL	1	-
J0959.4 + 2120	RX J0959.4 + 2123	149.8745	+21.3892	0.365	Bauer+ (2000)	bll	BLLAC	0	SDSS
J0959.6 + 4606	2MASX J09591976 + 4603515	149.8325	+46.0644	0.148	Peña-Herazo+ (2021)	bcu	SEY	0	SDSS displays only photometry and the image shows a likely edge-on spiral galaxy. The optical spectrum shows strong Hα, [OIII], and [OII] emission lines. Perhaps MIS?
J1001.1 + 2911	GB6 J1001 + 2911	150.2925	+29.1938	0.556	Shaw+ (2012)	bll	FSRQ	0	The SDSS spectrum displays an evident emission line at $\sim$ 4400 Å, which was incorrectly identified as [OIII], resulting in a zero-value redshift.
J1002.5 + 2215	1RXS J100235.8 + 221609	150.6434	+22.2708	0.616	Table A2	bll	BLLAC	1	SDSS
J1003.4 + 0205	SDSS J100326.63 + 020455.6	150.8608	+2.0822	0.786	Table A2	bcu	BLLAC	1	SDSS
J1003.6 + 2605	PKS 1000 + 26	150.9260	+26.0869	0.606	Table A2	bll	BLLAC	1	SDSS
J1003.6 − 2137	1RXS J100342.0 − 213752	150.9287	−21.6359	0.149	Table A2	bcu	UNCL	1	-
J1006.5 + 6440	RX J1006.1 + 6440	151.5509	+64.6699	0.732	Table A2	bll	BLLAC	1	SDSS
J1006.7 − 2159	PKS 1004 − 217	151.6934	−21.9890	0.330	Bolton+Savage (1977)	fsrq	FSRQ	0	-
J1007.0 + 3455	EXO 1004.0 + 3509	151.7353	+34.9126	0.640	Table A2	bll	BLLAC	1	SDSS
J1007.6 − 3332	PKS 1005 − 333	151.8808	−33.5519	1.84	Hook+ (2003)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1008.0 + 0028	PKS 1005 + 007	152.0477	+0.5000	0.0977	Grandi (1983)	bcu	MIS	0	Classified as FRI by Owen+ (1995) (redshift refinement and emission line properties) and Owen+ (1996) (radio morphology). Yuan+ (2016) reported $z = 0.176$, but it is not clear the origin of this measurement.
J1008.0 + 0620	MG1 J100800 + 0621	152.0034	+6.3559	1.72	Urrutia+ (2009)	bll	BLLAC	0	Shaw+ (2013) found a featureless spectrum, likely due to a change in the jet activity.
J1008.1 + 4706	RX J1008.1 + 4705	152.0475	+47.0892	0.343	Bade+ (1998)	bll	BLLAC	0	SDSS
J1008.7 − 2909	PMN J1008 − 2912	152.1880	−29.2122	1.67	Table A2	bcu	UNCL	1	-
J1008.8 − 3139	PKS 1006 − 313	152.2106	−31.6515	0.534	Landoni+ (2020)	bll	BLLAC	0	-
J1010.2 − 3119	1RXS J101015.9 − 311909	152.5666	−31.3190	0.143	Piranomonte+ (2007)	bll	BLLAC	0	-
J1010.8 − 0158	PKS 1008 − 01	152.7153	−2.0054	0.887	Drinkwater+ (1997)	fsrq	FSRQ	0	2dF
J1011.3 − 0427	PKS B1008 − 041	152.8760	−4.3910	1.59	Perlman+ (1998)	fsrq	FSRQ	0	-
J1012.3 + 0629	NRAO 350	153.0556	+6.5159	0.727	Sbarufatti+ (2005)	bll	AMB	0	The source displays ambiguous characteristics of both BL Lac Objects and FRII radio galaxies (Landt+Bignall (2008)). The SDSS clearly shows forbidden [OII] and [OIII] lines, but Sbarufatti+ (2005) also reported the detection of MgII. The radio spectrum is flat above 1.4 GHz, but steep below this frequency.
J1012.3 − 1232	PKS B1009 − 123	153.0627	−12.5611	0.852	Table A2	bcu	UNCL	1	-
J1012.7 + 2439	MG2 J101241 + 2439	153.1724	+24.6565	1.81	Shaw+ (2009)	fsrq	FSRQ	0	SDSS
J1012.7 + 4228	B3 1009 + 427	153.1846	+42.4992	0.365	Cao+ (1999)	agn	MIS	0	SDSS. Classified as FRII by Kayanoki+Fukazawa (2022)
J1013.3 − 2551	PKS B1010 − 255	153.3046	−25.7819	1.58	Table A2	bcu	UNCL	1	-
J1013.4 − 4006	NVSS J101319 − 400549	153.3315	−40.0966	-	-	bll	UNCL	3	-
J1013.7 + 3444	OL 318	153.4567	+34.7641	1.41	Wills+Wills (1976)	fsrq	FSRQ	0	SDSS
J1014.3 + 4112	GB6 J1014 + 4112	153.5745	+41.2049	0.732	Table A2	bcu	UNCL	1	-
J1014.8 + 2257	OL 220	153.6961	+23.0213	0.566	Schmidt (1974)	fsrq	FSRQ	0	SDSS. Please note that ADS has scanned the first printing of the Schmidt's paper, which do not include the table with the redshifts because of an error, but not the Errata Corrige, where the table is printed. It was necessary to retrieve the correct paper from our local library.
J1014.8 − 0537	AT20G J101446 − 054049	153.6919	−5.6797	0.589	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1015.0 + 4926	1H 1013 + 498	153.7672	+49.4335	0.212	Albert+ (2007)	bll	BLLAC	0	A value of $z = 0.2$ appeared in Lin+ (1996): they referred to Hewitt+Burbidge (1993), but that paper referred to Wisniewski+ (1986), which in turn reported a featureless spectrum and no redshift. SDSS spectrum is inconclusive, but with a strange blue tail.
J1015.6 + 5553	TXS 1012 + 560	153.9351	+55.8502	0.678	SDSS	fsrq	FSRQ	0	-
J1016.0 + 0512	TXS 1013 + 054	154.0131	+5.2173	1.70	SDSS	fsrq	FSRQ	0	-
J1016.4 + 7703	1RXS J101647.6 + 770239	154.1983	+77.0443	0.683	Table A2	bcu	UNCL	1	-
J1016.5 − 2650	NVSS J101634 − 265057	154.1446	−26.8499	0.689	Table A2	bcu	UNCL	1	-
J1017.3 + 5204	7C 1013 + 5217	154.2778	+52.0464	0.379	Galbiati+ (2005)	bcu	BLLAC	0	SDSS
J1017.4 + 2538	NVSS J101724 + 253955	154.3516	+25.6656	0.417	SDSS	bcu	BLLAC	0	-
J1017.8 + 0715	GB6 J1018 + 0715	154.5887	+7.2521	1.54	SDSS	bcu	FSRQ	0	-
J1018.1 + 1905	NVSS J101808 + 190614	154.5330	+19.1043	0.584	Table A2	bll	BLLAC	1	SDSS
J1018.3 − 3124	PKS 1016 − 311	154.6198	−31.3983	0.794	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J1018.4 + 0528	TXS 1015 + 057	154.6160	+5.5083	1.95	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1018.4 + 3540	B2 1015 + 35B	154.5458	+35.7110	1.23	Peterson+ (1978)	fsrq	FSRQ	0	Kraus+Gearhart (1975) reported $z = 1.6$, and this value remained in the literature for a while; it is not clear the reason of the mismatch. SDSS confirms Peterson's redshift.
J1018.8 + 5913	TXS 1015 + 594	154.7439	+59.1911	0.664	Table A2	bll	BLLAC	1	SDSS
J1018.9 + 1043	SDSS J101857.97 + 103625.6	154.7416	+10.6071	0.660	SDSS	bcu	AMB	0	The SDSS spectrum is galaxy-dominated, with strong [OII] and other weak lines. The LAT spectrum is quite soft ($\Gamma \sim 3$), suggesting a misaligned AGN, rather than a BLLAC, but the radio spectrum is flat, although there are no measurements below 1.4 GHz.
J1019.7 + 6321	GB6 J1019 + 6319	154.9620	+63.3338	0.452	Table A2	bll	BLLAC	1	SDSS
J1021.1 + 1626	SDSS J102100.35 + 162554.0	155.2515	+16.4317	0.566	Table A2	bll	BLLAC	1	SDSS
J1021.4 + 8021	NVSS J102201 + 802350	155.5088	+80.3972	0.771	Table A2	bcu	UNCL	1	-
J1021.9 + 5123	MS 1019.0 + 5139	155.5526	+51.4001	0.142	Stocke+ (1991)	bll	AMB	0	SDSS. The optical spectrum is more FRI-like than BL Lac (Rector+ (1999)), while the remaining MW characteristics are of a BL Lac Object.
J1022.4 − 4231	PMN J1022 − 4232	155.5766	−42.5353	-	-	bll	UNCL	3	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1022.7 − 0112	RX J1022.7 − 0112	155.6822	−1.2173	0.117	Table A2	bll	BLLAC	1	Landoni+ (2013)
J1023.1 + 3949	4C +40.25	155.7982	+39.8043	1.25	Hewitt+Burbidge (1993)	fsrq	FSRQ	0	SDSS
J1023.2 + 2859	TXS 1020 + 292	155.8502	+28.9475	0.671	Muñoz+ (2003)	fsrq	FSRQ	0	The SDSS is noise-dominated, but it displays a clear emission line at ∼ 4700 Å corresponding to MgII.
J1023.8 + 3002	RX J1023.6 + 3001	155.9156	+30.0160	0.433	SDSS	bll	BLLAC	0	-
J1023.8 − 4335	RX J1023.9 − 4336	155.9850	−43.6006	0.534	Stadnik+Romani (2014)	bll	BLLAC	1	-
J1023.9 − 3236	PKS 1021 − 323	156.0018	−32.5711	1.57	Hook+ (2003)	fsrq	FSRQ	0	-
J1024.8 + 2332	MG2 J102456 + 2332	156.2235	+23.5428	0.165	SDSS	bll	SEY	0	-
J1026.9 + 0608	NVSS J102703 + 060934	156.7642	+6.1594	0.302	Table A2	bll	BLLAC	1	SDSS
J1026.9 − 1749	1RXS J102658.5 − 174905	156.7441	−17.8164	0.267	Jones+ (2009)	bll	BLLAC	0	Although the 6dF measurement has $q = 3$, the Ca H+K and G band are clearly visible. Bauer+ (2000) reported an uncertain $z = 0.114$.
J1027.0 − 8542	PKS 1029 − 85	156.6432	−85.7206	-	-	bll	BLLAC	2	Titov+ (2017)
J1027.2 + 7427	GB6 J1027 + 7428	156.8506	+74.4739	0.879	Falco+ (1998)	bcu	FSRQ	0	-
J1027.6 + 1828	GB6 J1027 + 1831	156.9376	+18.5274	0.461	Table A2	bcu	UNCL	1	-
J1027.6 + 6317	RX J1027.4 + 6317	156.8540	+63.2981	0.816	Table A2	bll	BLLAC	1	SDSS
J1027.6 + 8251	2MASS J10284195 + 8253398	157.1750	+82.8946	0.875	Table A2	bcu	UNCL	1	-
J1027.9 + 0252	TXS 1025 + 031	157.0850	+2.9229	0.715	Healey+ (2008)	fsrq	FSRQ	0	-
J1028.3 + 3108	TXS 1025 + 313	157.0734	+31.1262	0.240	Falco+ (1998)	bll	BLLAC	0	SDSS
J1028.4 − 0234	PMN J1028 − 0237	157.1418	−2.6166	0.471	Landt+ (2001)	fsrq	FSRQ	0	SDSS
J1030.2 − 8403	PMN J1030 − 8402	157.5637	−84.0524	-	-	bcu	UNCL	3	-
J1030.4 − 3001	PMN J1030 − 3004	157.6292	−30.0613	0.584	Table A2	bcu	UNCL	1	-
J1030.6 − 2028	NVSS J103040 − 203032	157.6684	−20.5101	0.877	Table A2	bll	BLLAC	1	Desai+ (2019)
J1031.1 + 7442	S5 1027 + 74	157.8418	+74.6995	0.123	Stickel+Kühr (1993)	bll	FSRQ	0	-
J1031.3 + 5053	1ES 1028 + 511	157.8272	+50.8933	0.361	Polomski+ (1997)	bll	BLLAC	0	-
J1031.6 + 6019	TXS 1028 + 605	157.9365	+60.3418	1.23	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1031.8 − 2609	NVSS J103137 − 260715	157.9079	−26.1213	0.219	Table A2	bcu	UNCL	1	It seems to be the dominant galaxy in a cluster; Pierre+ (1994) and Bauer+ (2000) reported an uncertain $z = 0.247$ of unknown origin.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1032.6 + 3737	B3 1029 + 378	158.1697	+37.6408	0.502	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1032.7 + 6624	2MASS J10323905 + 6623234	158.1628	+66.3898	0.681	Table A2	bll	BLLAC	1	SDSS
J1033.1 + 4115	S4 1030 + 41	158.2654	+41.2684	1.12	Walsh+ (1979)	fsrq	FSRQ	0	SDSS
J1033.5 + 4221	GB6 J1033 + 4222	158.3246	+42.3764	0.211	SDSS	bll	BLLAC	0	-
J1033.7 + 3708	RX J1033.8 + 3708	158.4433	+37.1403	0.448	SDSS	bcu	BLLAC	0	Noisy spectrum, caveat.
J1033.9 + 6050	S4 1030 + 61	158.4643	+60.8520	1.41	SDSS	FSRQ	FSRQ	0	Stickel+Kuhr (1994) reported $z = 0.336$ on the basis of one individual emission line identified as MgII.
J1034.0 − 2547	PMN J1033 − 2544	158.4627	−25.7522	1.13	Table A2	bcu	UNCL	1	-
J1035.3 + 5541	GB6 J1035 + 5542	158.9398	+55.7151	0.883	Table A2	bcu	BLLAC	1	SDSS
J1035.3 − 2050	2MASS J10351532 − 2050261	158.8137	−20.8406	-	-	bcu	UNCL	3	-
J1036.2 + 2202	OL 256	159.1374	+22.0534	0.595	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1036.5 + 1231	TXS 1034 + 128	159.1682	+12.5607	0.529	Table A2	bll	BLLAC	1	SDSS
J1036.6 − 3741	PKS 1034 − 374	159.2227	−37.7375	1.82	Jauncey+ (1984)	fsrq	FSRQ	0	-
J1037.0 − 1954	1RXS J103657.5 − 195432	159.2332	−19.9066	0.302	Table A2	bcu	UNCL	1	-
J1037.4 − 2933	PKS 1034 − 293	159.3170	−29.5674	0.312	Stickel+Kühr (1989)	fsrq	CLAGN	0	Jauncey+ (1979) reported a featureless continuum with $EW < 0.2$, while the Stickel & Kühr's (1989) spectrum showed lines with $EW > 3.6$.
J1037.7 + 5711	GB6 J1037 + 5711	159.4346	+57.1988	1.14	Table A2	bll	BLLAC	1	Paiano+ (2020)
J1037.7 − 2822	PKS B1035 − 281	159.4269	−28.3845	1.07	Shaw+ (2012)	fsrq	FSRQ	0	-
J1038.2 − 2425	NVSS J103824 − 242355	159.6003	−24.3986	1.01	Table A2	bcu	UNCL	1	-
J1038.5 + 3926	NVSS J103845 + 392736	159.6912	+39.4597	0.490	Table A2	bll	BLLAC	1	SDSS
J1039.6 + 0535	NVSS J103940 + 053608	159.9196	+5.6025	0.512	Ching+ (2017)	bcu	BLLAC	0	-
J1039.7 − 1540	PKS B1036 − 154	159.7779	−15.6852	0.525	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J1039.9 + 7326	GB6 J1039 + 7326	159.9146	+73.4325	0.666	Table A2	bcu	UNCL	1	-
J1040.5 + 0617	GB6 J1040 + 0617	160.1318	+6.2894	0.740	Paiano+ (2021)	bll	BLLAC	0	SDSS reported $z = 0.735$ on the basis of an extremely weak feature identified as MgII.
J1041.0 + 1342	1RXS J104057.7 + 134216	160.2404	+13.7032	1.156	Table A2	bll	UNCL	1	-
J1041.1 − 1201	NVSS J104108 − 120332	160.2857	−12.0586	0.347	Table A2	bcu	UNCL	1	-
J1041.7 + 3902	B3 1038 + 392	160.4548	+39.0221	0.208	Bauer+ (2000)	bll	BLLAC	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1041.9 − 0557	PMN J1042 − 0558	160.5179	−5.9713	0.390	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J1042.1 − 4128	1RXS J104204.1 − 412936	160.5126	−41.4916	0.3	Table A2	bll	UNCL	1	-
J1042.9 + 0054	RBS 895	160.7660	+0.9057	0.660	Ching+ (2017)	bcu	BLLAC	0	Boyle+ (1990) suggested an uncertain $z = 0.73$ on the basis of a single feature identified as Mg II and low S/N spectrum.
J1043.2 + 2408	B2 1040 + 24A	160.7876	+24.1432	0.559	White+ (2000)	fsrq	CLAGN	0	Hook+ (1996) reported a featureless spectrum with an upper limit to the lines $EW < 3$ Å. White+ (2000) measured the redshift by using lines with $EW \sim 5$ Å. SDSS displays a prominent MgII line.
J1043.6 + 0654	NVSS J104323 + 065307	160.8495	+6.8861	1.21	Table A2	bll	BLLAC	1	Paiano+ (2021)
J1044.6 + 8053	S5 1039 + 81	161.0961	+80.9110	1.26	Eckart+ (1986)	fsrq	FSRQ	0	-
J1045.3 + 2751	NVSS J104516 + 275136	161.3179	+27.8593	0.841	Table A2	bll	BLLAC	1	SDSS
J1045.8 − 2928	PKS B1043 − 291	161.4193	−29.4573	2.13	Baker+ (1999)	fsrq	FSRQ	0	-
J1046.0 + 5448	7C 1043 + 5505	161.6200	+54.8290	0.249	Caccianiga+ (2002)	bcu	AMB	0	SDSS. Caccianiga+ (2002) classified it as Type 2, which are objects with only narrow emission lines (Seyfert 2, Narrow-Emission Line Radio Galaxies, LINERS, starburst), but Caccianiga+ (2004) reported a core dominance parameter ~ 13.6. The steep gamma-ray spectrum ($\Gamma \sim 2.4$) favors a radio galaxy.
J1046.8 − 2534	NVSS J104651 − 253547	161.7142	−25.5958	0.254	Piranomonte+ (2007)	bll	BLLAC	0	-
J1047.7 + 7238	GB6 J1047 + 7238	161.9480	+72.6369	0.437	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1047.9 + 0055	TXS 1045 + 011	162.0323	+0.9287	0.643	Zhou+ (2004)	bcu	AMB	0	Zhou+ (2004) also proposed that the source could be a binary black hole on the basis of double-peaked lines, but Jaiswal+ (2019) suggested that the line profiles are due to the interaction of the jet with the NLR. SDSS: please note an error in the redshift evaluation from the automatic pipeline, where the Hβ+[OIII] complex is incorrectly identified as Hα+[NII] complex, with a clear mismatch of the frequencies of many other lines.
J1047.9 − 3738	GALEXASC J104756.99 − 373730.1	161.9872	−37.6252	-	-	bcu	UNCL	3	-
J1048.0 − 1912	PKS 1045 − 18	162.0276	−19.1599	0.595	Murdoch+ (1984)	fsrq	NLS1	0	FWHM(Hβ) ~ 1700 km/s, [OIII]/H$\beta \sim 0.7$.
J1048.4 + 7143	S5 1044 + 71	162.1151	+71.7266	1.15	Stickel+ (1996)	FSRQ	FSRQ	0	-
J1049.5 + 1548	GB6 J1049 + 1548	162.4140	+15.8104	0.327	Paggi+ (2014)	bll	BLLAC	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1049.7 + 5011	NVSS J104857 + 500943	162.2400	+50.1625	0.402	SDSS	bll	BLLAC	0	-
J1049.8 + 1429	MG1 J104945 + 1429	162.4430	+14.4940	0.949	Table A2	bcu	UNCL	1	-
J1050.1 + 0432	MG1 J105009 + 0433	162.5419	+4.5470	1.22	Clowes+Campusano (1994)	fsrq	FSRQ	0	SDSS
J1051.4 + 3942	RBS 909	162.8557	+39.7238	0.498	Beckmann+ (2003)	bll	BLLAC	0	SDSS
J1051.4 − 3139	PKS 1048 − 313	162.7699	−31.6373	1.43	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J1051.6 + 2109	OL 282	162.9533	+21.3312	1.30	Wills+Wills (1976)	fsrq	FSRQ	0	SDSS
J1051.9 + 0103	NVSS J105151 + 010312	162.9660	+1.0530	0.265	Shaw+ (2013)	bll	BLLAC	0	SDSS
J1052.3 + 0818	2MASX J10522451 + 0814095	163.1022	+8.2360	0.223	SDSS	bcu	BLLAC	0	-
J1052.9 − 3743	PMN J1053 − 3743	163.2421	−37.7218	-	-	bll	BLLAC	2	Marchesini+ (2019)
J1053.7 + 4930	GB6 J1053 + 4930	163.4339	+49.4989	0.140	Gioia+ (1990)	bll	MIS	0	SDSS. Capetti+ (2017) display an image of radio structure showing a clear bipolar large scale jet (>30 kpc).
J1053.9 + 8628	WN B1046.1 + 8645	163.5928	+86.4934	0.224	Table A2	bcu	UNCL	1	-
J1054.2 + 3926	CRATES J105433 + 392803	163.6351	+39.4701	2.64	SDSS	bcu	FSRQ	0	-
J1054.5 + 2211	87GB 105148.6 + 222705	163.6276	+22.1819	0.316	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1055.5 − 0125	RX J1055.5 − 0126	163.8932	−1.4379	0.755	Table A2	bll	BLLAC	1	Paiano+ (2020)
J1056.0 + 0253	RX J1056.1 + 0252	164.0275	+2.8704	0.236	Appenzeller+ (1998)	bll	BLLAC	0	SDSS
J1056.8 + 7012	S5 1053 + 70	164.2234	+70.1961	2.49	Xu+ (1994)	fsrq	FSRQ	0	-
J1057.2 + 5510	SDSS J105707.47 + 551032.2	164.2810	+55.1756	0.761	Table A2	bcu	BLLAC	1	SDSS
J1057.3 − 2341	PKS B1054 − 234	164.3518	−23.7005	1.13	Healey+ (2008)	fsrq	FSRQ	0	-
J1057.8 − 2754	RX J1057.8 − 2753	164.4615	−27.9030	0.092	Bade+ (1994)	bll	BLLAC	0	-
J1058.0 + 4305	B3 1055 + 433	164.5122	+43.0782	1.31	SDSS	bll	BLLAC	0	-
J1058.4 + 0133	4C +01.28	164.6234	+1.5663	0.892	Kraus+Gearhart (1975)	BLL	FSRQ	0	SDSS
J1058.5 + 8115	S5 1053 + 81	164.5481	+81.2424	0.706	Xu+ (1994)	fsrq	FSRQ	0	-
J1058.6 + 2817	GB6 J1058 + 2817	164.6246	+28.2962	0.254	Table A2	bll	BLLAC	1	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1058.6 + 5627	TXS 1055 + 567	164.6572	+56.4698	0.143	Bade+ (1998)	BLL	BLLAC	0	SDSS. Marcha+ (1996) reported $z = 0.410$ by identifying as [OIII] complex two strong lines at $\sim$ 7000 Å(observation done in 1992). These lines were never confirmed. Laurent-Muehleisen+ (1998) observed the source in 1994-1995 and found a featureless spectrum. Bade's observation was done in 1997, but no lines around $\sim$ 7000 Å(the same in SDSS spectrum).
J1058.6 − 8003	PKS 1057 − 79	164.6805	−80.0650	0.581	Sbarufatti+ (2009)	bll	BLLAC	0	-
J1059.2 − 1134	PKS B1056 − 113	164.8018	−11.5730	0.611	Table A2	bll	BLLAC	1	Paiano+ (2020)
J1059.5 + 2057	MG2 J105938 + 2057	164.9127	+20.9561	0.393	Hook+ (1996)	fsrq	FSRQ	0	SDSS
J1100.3 + 4020	RX J1100.3 + 4019	165.0878	+40.3245	0.225	Beckmann+ (2003)	bll	BLLAC	0	-
J1101.4 + 4108	RX J1101.3 + 4108	165.3530	+41.1465	1.15	Table A2	bll	BLLAC	1	SDSS
J1101.5 + 3904	CRATES J110130 + 390434	165.3753	+39.0757	0.941	Table A2	bcu	UNCL	1	-
J1102.1 + 2249	CLASS J1102 + 2241	165.5131	+22.6989	0.577	Table A2	fsrq	UNCL	1	-
J1102.6 + 5251	GB6 J1102 + 5249	165.7077	+52.8368	0.690	SDSS	fsrq	NLS1	0	FWHM(Hβ)$\sim$ 2005 km/s, Rakshit+ (2017).
J1102.8 − 0148	RX J1102.8 − 0148	165.7167	−1.8142	0.545	Table A2	bcu	UNCL	1	-
J1102.9 + 3014	B2 1100 + 30B	165.8054	+30.2452	0.384	Everett+Wagner (1995)	fsrq	FSRQ	0	SDSS. Maithil+ (2020) suspect it might be a CSS.
J1103.0 + 1157	TXS 1100 + 122	165.7647	+11.9713	0.913	Afanas'ev+ (2003)	fsrq	FSRQ	0	SDSS
J1103.6 − 2329	1ES 1101 − 232	165.9067	−23.4920	0.186	Remillard+ (1989)	bll	BLLAC	0	Kirhakos+Steiner (1990) proposed $z = 0.0038$ and associated it to NGC 3513, which in turn is $\sim 15'$ distant! It seems clearly to be an error. Remillard's redshift was later confirmed by Falomo+ (1993) and many others studies.
J1104.0 + 0020	NVSS J110356 + 002238	165.9840	+0.3768	0.275	Colless+ (2001)	bll	BLLAC	0	SDSS shows a nearby object, but without spectrum. Might be an interacting system. To be checked.
J1104.0 + 2611	SDSS J110357.29 + 261119.1	165.9887	+26.1886	0.771	Table A2	bcu	BLLAC	1	SDSS
J1104.4 + 0730	MG1 J110424 + 0730	166.1003	+7.5148	0.295	Table A2	bll	BLLAC	1	SDSS
J1104.4 + 3812	Mkn 421	166.1138	+38.2088	0.0308	Ulrich+ (1975)	BLL	BLLAC	0	-
J1104.9 + 5748	7C 1101 + 5808	166.0540	+57.8702	-	-	bcu	UNCL	3	-
J1105.8 + 3944	GB6 J1105 + 3946	166.4742	+39.7825	0.099	SDSS	bll	BLLAC	0	In the compact group of galaxies Shakhbazian 7 (Shakhbazian 1973).

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1106.0 + 2813	MG2 J110606 + 2812	166.5303	+28.2131	0.842	Glickman+ (2007)	fsrq	FSRQ	0	SDSS
J1106.2 − 1048	PMN J1106 − 1048	166.5234	−10.8148	0.242	Table A2	bcu	UNCL	1	-
J1106.5 − 3646	PMN J1106 − 3647	166.6002	−36.7830	0.412	Table A2	bll	BLLAC	1	Peña-Herazo+ (2017)
J1107.0 − 4449	PKS 1104 − 445	166.7862	−44.8188	1.60	Peterson+ (1979)	fsrq	FSRQ	0	-
J1107.6 + 0222	NVSS J110735 + 022225	166.8996	+2.3735	0.610	Table A2	bll	BLLAC	1	Paiano+ (2017)
J1107.7 − 3042	PKS 1105 − 304	166.9339	−30.7264	0.740	Caccianiga+ (2000)	fsrq	FSRQ	0	-
J1107.8 + 1501	RX J1107.7 + 1502	166.9503	+15.0363	0.386	Table A2	bll	BLLAC	1	SDSS. Bauer+ (2000) reported $z = 0.259$ with the flag "uncertain", and never confirmed.
J1108.7 − 1844	NVSS J110845 − 184505	167.1905	−18.7515	0.693	Table A2	bcu	UNCL	1	-
J1109.3 + 2411	1ES 1106 + 244	167.3174	+24.1889	0.46	Sbarufatti+ (2005)	bll	BLLAC	1	Sbarufatti+ (2009) reported in an ATel, a spectroscopic $z = 0.482$ based on the detection of the Ca H&K break, but the value was not confirmed in a subsequent paper (Landoni+ (2013)). Paiano+ (2017) still found a featureless spectrum.
J1109.6 + 3735	NVSS J110938 + 373609	167.4104	+37.6032	0.398	SDSS	bll	BLLAC	0	-
J1109.7 − 4814	PMN J1109 − 4815	167.3286	−48.2554	0.513	Table A2	bcu	UNCL	1	-
J1110.2 + 7135	RX J1110.5 + 7133	167.6567	+71.5657	0.579	Table A2	bll	BLLAC	1	Laurent-Muehleisen+ (1998)
J1110.5 − 1836	CRATES J111027.78 − 183552.6	167.6157	−18.5980	0.860	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1111.0 + 3542	FBQS J111056.8 + 353907	167.7368	+35.6520	0.549	Table A2	bll	BLLAC	1	SDSS
J1111.4 − 4624	WISE J111127.39 − 462504.0	167.8642	−46.4178	-	-	bcu	UNCL	3	-
J1111.5 + 3455	RX J1111.5 + 3452	167.8787	+34.8676	0.212	Bade+ (1998)	bll	BLLAC	0	-
J1111.8 + 4858	SDSS J111158.89 + 485701.4	167.9954	+48.9504	0.577	Table A2	bcu	BLLAC	1	SDSS
J1112.4 + 1751	1RXS J111224.2 + 175131	168.1025	+17.8561	0.421	SDSS	bll	BLLAC	0	-
J1112.5 + 3448	TXS 1109 + 350	168.1615	+34.7775	1.95	Hewitt+Burbidge (1993)	fsrq	FSRQ	0	SDSS
J1113.6 − 1920	NVSS J111348 − 192252	168.4537	−19.3815	0.779	Table A2	bcu	UNCL	1	-
J1114.5 − 0819	PKS B1112 − 080	168.6356	−8.2775	2.08	Healey+ (2008)	fsrq	FSRQ	0	-
J1114.7 − 0248	PMN J1114 − 0248	168.6653	−2.7922	1.04	Croom+ (2004)	fsrq	FSRQ	0	-
J1115.2 − 0703	NVSS J111511 − 070238	168.7989	−7.0444	0.437	Table A2	bcu	UNCL	1	-
J1116.6 + 2915	B2 1113 + 29	169.1442	+29.2548	0.049	Burbidge+Strittmatter (1972)	rdg	MIS	0	SDSS. Dumbbell, FRI, Liuzzo+ (2009), Liuzzo+ (2010).

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1117.0 + 2013	RBS 958	169.2760	+20.2354	0.138	Schwope+ (2000)	bll	BLLAC	0	SDSS
J1117.2 + 0008	RX J1117.2 + 0006	169.3231	+0.1093	0.451	SDSS	bll	BLLAC	0	-
J1117.6 + 0217	PMN J1117 + 0216	169.3484	+2.2721	0.836	Table A2	bcu	UNCL	1	-
J1117.6 + 2550	RX J1117.6 + 2548	169.4183	+25.8130	0.360	White+ (2000)	bll	BLLAC	0	-
J1117.7 − 3650	NVSS J111758 − 364918	169.4934	−36.8220	0.677	Table A2	bcu	UNCL	1	-
J1118.0 + 5356	NVSS J111757 + 535553	169.4885	+53.9319	0.935	Table A2	bll	BLLAC	1	SDSS
J1118.2 − 0415	PMN J1118 − 0413	169.5519	−4.2234	0.715	Table A2	agn	UNCL	1	-
J1118.2 − 4634	PKS 1116 − 46	169.6123	−46.5708	0.713	Tritton (1971)	fsrq	FSRQ	0	-
J1118.6 − 1235	PKS 1115 − 12	169.5714	−12.5484	1.74	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J1119.0 + 1235	OM 127	169.7388	+12.5783	2.12	Schmidt (1966)	fsrq	FSRQ	0	SDSS
J1119.6 − 3047	1RXS J111941.0 − 304652	169.9146	−30.7889	0.412	Piranomonte+ (2007)	bll	BLLAC	0	-
J1120.6 + 0713	1RXS J112041.6 + 071335	170.1733	+7.2264	0.335	Table A2	bcu	UNCL	1	-
J1120.8 + 4212	RBS 970	170.2003	+42.2035	0.053	Table A2	bll	BLLAC	1	Perlman+ (1996) reported an uncertain $z = 0.124$ on the basis of Ca H&K break, but this value was challenged by Falomo+Kotilainen (1999), on the basis of the imaging of the host galaxy (not resolved). No further observation confirmed Perlman's value. The latest observation by Paiano+ (2017) still found a featureless spectrum.
J1121.3 − 0011	MGC 0019706	170.3309	−0.2212	0.0993	Liske+ (2003)	bcu	MIS	0	Sadler+ (2014) classified it as FRI Wide-Angle-Tail radio galaxy.
J1121.4 − 0553	PKS 1118 − 05	170.3546	−5.8990	1.30	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J1123.1 − 3233	1RXS J112318.0 − 323219	170.8252	−32.5385	0.200	Table A2	bll	BLLAC	1	6dF
J1123.4 − 2529	NVSS J112325 − 252858	170.8557	−25.4825	0.146	Jones+ (2009)	fsrq	FSRQ	0	6dF
J1123.6 + 8028	WN B1120.0 + 8046	170.9307	+80.5065	1.33	Table A2	bcu	UNCL	1	-
J1123.8 + 7230	RX J1123.8 + 7230	170.9550	+72.5000	0.690	Table A2	bll	BLLAC	1	Massaro+(2015)
J1124.0 + 2045	SDSS J112405.35 + 204553.7	171.0223	+20.7649	0.523	Table A2	bll	BLLAC	1	SDSS
J1124.0 + 2336	OM 235	171.0113	+23.6127	1.55	Shaw+ (2012)	fsrq	CLAGN	0	SDSS confirms Shaw's value. Sowards-Emmerd+ (2005) and Healey+ (2008) reported a featureless spectrum. Mahabal+ (2009) reported $z = 2.14$ on a likely wrong identification of Lyα and CIV lines.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1124.4 + 2308	CRATES J112431 + 230745	171.1316	+23.1322	0.795	SDSS	bcu	BLLAC	0	There is a mismatch ($\sim 14''$) between the CRATES coordinates and the columns `RA_counterpart` and `DEC_counterpart` in the 4FGL. The former have no entries both in SIMBAD and NED, while the latter are coincident with SDSS J112431.58 + 230755.9. Hook+ (1996) reported a featureless spectrum.
J1124.6 − 0809	AT20G J112437 − 080643	171.1563	−8.1119	0.638	Table A2	bcu	UNCL	1	-
J1124.9 + 2143	SDSS J112503.64 + 214300.1	171.2652	+21.7167	1.00	Table A2	bll	BLLAC	1	SDSS
J1124.9 + 4934	GB6 J1124 + 4933	171.2243	+49.5694	0.520	Table A2	bll	BLLAC	1	SDSS
J1125.1 − 2101	PMN J1125 − 2100	171.2859	−21.0183	0.461	Table A2	bll	UNCL	1	-
J1125.5 − 3557	PMN J1125 − 3556	171.3812	−35.9509	0.284	Shaw+ (2013)	bll	BLLAC	0	-
J1125.9 + 2005	4C +20.25	171.4948	+20.0984	0.133	Sargent (1973)	fsrq	AMB	0	SDSS with strong narrow forbidden lines and weak Hβ. Marchã+ (1996) suggested a candidate BL Lac; Zirbel+Baum (1995) suggested a FRII radiogalaxy. The radio spectrum is flat, but the gamma-ray spectrum is on the borderline between a BL Lac and a FSRQ.
J1125.9 − 0742	1RXS J112551.6 − 074219	171.4666	−7.7059	0.279	Bauer+ (2000)	bll	BLLAC	0	-
J1126.8 − 3829	PKS 1124 − 382	171.6839	−38.4789	0.572	Table A2	bcu	UNCL	1	-
J1127.0 − 1857	PKS 1124 − 186	171.7683	−18.9548	1.05	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J1127.4 + 5648	S4 1124 + 57	171.9172	+56.8374	2.89	Walsh+ (1984)	fsrq	FSRQ	0	SDSS
J1127.6 − 4920	MRC 1125 − 490	171.9191	−49.3234	-	-	bcu	UNCL	3	-
J1127.8 + 3618	MG2 J112758 + 3620	171.9953	+36.3412	0.884	Healey+ (2008)	fsrq	FSRQ	0	SDSS
J1128.0 + 5924	TXS 1125 + 596	172.0556	+59.4208	1.80	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1128.8 + 3757	NVSS J112903 + 375655	172.2635	+37.9491	0.963	Table A2	bll	BLLAC	1	Paiano+ (2017)
J1129.1 + 3703	CRATES J112916 + 370317	172.3096	+37.0550	0.633	Table A2	bll	BLLAC	1	SDSS
J1129.2 − 0529	NVSS J112914 − 052856	172.3086	−5.4823	0.920	Peña-Herazo+ (2017)	bcu	FSRQ	0	-
J1129.2 − 1014	NVSS J112912 − 101349	172.3022	−10.2304	0.817	Table A2	bcu	UNCL	1	-
J1129.5 + 3034	87GB 112657.9 + 305242	172.4054	+30.6096	0.586	Table A2	bcu	BLLAC	1	SDSS
J1129.8 − 1447	PKS 1127 − 14	172.5294	−14.8243	1.19	Burbidge+Kinman (1966)	fsrq	FSRQ	0	6dF
J1129.8 − 4217	LEDA 566417	172.5293	−42.2447	0.150	Table A2	bll	BLLAC	1	6dF
J1130.5 − 3137	NVSS J113046 − 313805	172.6922	−31.6354	0.151	Jones+ (2009)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1130.5 − 7801	SUMSS J113032 − 780105	172.6336	−78.0182	0.167	Table A2	bll	BLLAC	1	Desai+ (2019)
J1131.0 + 3815	B2 1128 + 38	172.7220	+38.2552	1.74	Xu+ (1994)	fsrq	FSRQ	0	SDSS
J1131.1 − 0944	1RXS J113104.6 − 094353	172.7719	−9.7351	0.623	Table A2	bcu	UNCL	1	Grazian+ (2002) classified it as a star (but no spectrum published). Radio: there is only the NVSS detection (∼ 22 mJy at 1.4 GHz)
J1131.4 + 5809	1RXS J113117.8 + 580911	172.8276	+58.1497	0.360	SDSS	bll	BLLAC	0	-
J1131.4 − 0504	PKS 1128 − 047	172.8772	−5.0055	0.266	Drinkwater+ (1997)	bcu	MIS	0	Classified as radiogalaxy by Angioni+ (2019) and Homan+ (2021).
J1132.2 − 4736	SUMSS J113209 − 473856	173.0386	−47.6482	0.210	Peña-Herazo+ (2017)	bcu	BLLAC	0	-
J1132.7 + 0034	PKS B1130 + 008	173.1901	+0.5744	0.678	Shaw+ (2013)	bll	BLLAC	0	-
J1133.8 − 2048	NVSS J113350 − 204852	173.4579	−20.8144	0.0587	Jones+ (2009)	bll	BLLAC	0	-
J1134.8 − 1729	1RXS J113443.6 − 172853	173.6854	−17.4839	0.571	Piranomonte+ (2007)	bll	BLLAC	0	-
J1135.1 + 3014	CRATES J113514 + 301001	173.8087	+30.1682	0.757	Table A2	bll	BLLAC	1	SDSS
J1135.7 − 0427	PMN J1135 − 0428	173.9926	−4.4744	0.273	Sadler+ (2002)	fsrq	FSRQ	0	-
J1136.2 + 3407	MG2 J113627 + 3408	174.1139	+34.1276	1.34	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1136.3 − 0501	NVSS J113607 − 050156	174.0310	−5.0325	0.286	Table A2	bcu	UNCL	1	-
J1136.4 + 6736	RX J1136.5 + 6737	174.1254	+67.6179	0.134	Bade+ (1994)	bll	BLLAC	0	SDSS
J1136.4 + 7009	Mkn 180	174.1100	+70.1576	0.0458	Ulrich (1978)	bll	BLLAC	0	-
J1136.8 + 2550	RX J1136.8 + 2551	174.2089	+25.8479	0.154	White+ (2000)	bll	SEY	0	SDSS
J1136.8 − 7413	PKS 1133 − 739	174.0402	−74.2626	0.486	Table A2	bcu	UNCL	1	-
J1137.9 − 1708	NVSS J113755 − 171031	174.4808	−17.1783	0.600	Piranomonte+ (2007)	bll	BLLAC	0	-
J1138.2 + 4115	NVSS J113812 + 411353	174.5508	+41.2311	0.315	Table A2	bll	BLLAC	1	SDSS
J1138.4 + 4857	GB6 J1138 + 4858	174.5087	+48.9826	1.30	SDSS	fsrq	FSRQ	0	-
J1139.0 + 4033	CRATES J113903 + 403303	174.7614	+40.5486	2.36	SDSS	bcu	FSRQ	0	-
J1139.0 + 5530	RX J1138.9 + 5530	174.7533	+55.5097	0.628	Table A2	bll	UNCL	1	-
J1140.5 + 1528	NVSS J114023 + 152808	175.0978	+15.4694	0.244	Bauer+ (2000)	bll	BLLAC	0	SDSS
J1141.4 + 6805	1RXS J114118.3 + 680433	175.3272	+68.0750	0.598	Table A2	bcu	UNCL	1	-
J1141.5 − 1408	NVSS J114141 − 140753	175.4242	−14.1319	0.360	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J1142.0 + 1548	MG1 J114208 + 1547	175.5322	+15.7984	0.734	Table A2	bll	BLLAC	1	Shaw+ (2013)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1143.1 + 6122	GB6 J1143 + 6122	175.8004	+61.3697	0.322	Table A2	bll	BLLAC	1	SDSS
J1144.9 + 1937	3C 264	176.2709	+19.6063	0.022	Schmidt (1965)	rdg	MIS	0	SDSS, classified as FRI by Balmaverde+ (2021)
J1145.5 + 4423	B3 1143 + 446A	176.4105	+44.3394	0.300	Hook+ (1996)	fsrq	SEY	0	SDSS, optical spectrum with strong narrow lines, flat radio spectrum.
J1145.5 − 0340	RBS 1029	176.3963	−3.6671	0.168	Machalski+Condon (1999)	bll	BLLAC	0	SDSS
J1145.6 + 5552	87GB 114248.3 + 560915	176.3828	+55.8802	1.11	Table A2	bcu	UNCL	1	-
J1145.7 + 0453	PKS 1142 + 052	176.3388	+4.9241	1.34	White+ (1988)	fsrq	FSRQ	0	SDSS
J1146.4 − 3327	PKS 1143 − 331	176.6185	−33.4785	0.294	Mahony+ (2011)	bcu	FSRQ	-	-
J1146.6 − 2902	PKS 1143 − 287	176.6091	−28.9885	1.06	Table A2	fsrq	BLLAC	1	Wilkes+ (1983) reported $z = 0.45$ flagged as uncertain. It was never confirmed; nonetheless, it propagated into the literature as certain value.
J1146.9 + 3958	S4 1144 + 40	176.7429	+39.9762	1.09	Vigotti+ (1990)	fsrq	FSRQ	0	SDSS
J1147.0 − 3812	PKS 1144 − 379	176.7557	−38.2031	1.05	Stickel+ (1989)	bll	BLLAC	0	-
J1147.2 − 2627	PMN J1147 − 2625	176.7762	−26.4207	0.963	Table A2	bcu	UNCL	1	-
J1147.8 − 0724	PKS 1145 − 071	176.9648	−7.4114	1.34	Wilkes+ (1983)	fsrq	FSRQ	0	Binary? Djorgovski+ (1987)
J1148.5 + 2629	TXS 1145 + 268	176.9990	+26.5951	0.866	Bade+ (1995)	fsrq	FSRQ	0	SDSS
J1148.6 + 1841	TXS 1146 + 189	177.1574	+18.6692	0.654	Table A2	bll	BLLAC	1	SDSS
J1149.0 + 5924	NGC 3894	177.2098	+59.4157	0.0108	Kelton (1980)	rdg	MIS	0	LAMOST. E/S0 host galaxy, twin jets, CSO? Taylor+ (1998)
J1149.1 + 2819	7C 1146 + 2841	177.2871	+28.4097	1.24	Table A2	bcu	UNCL	1	-
J1149.2 + 6246	NVSS J114926 + 624333	177.3589	+62.7257	0.478	Table A2	bll	BLLAC	1	SDSS
J1149.4 + 2441	RX J1149.5 + 2439	177.3765	+24.6575	0.402	Beckmann+ (2003)	bll	BLLAC	0	SDSS
J1149.5 − 4029	PMN J1149 − 4029	177.3238	−40.4967	-	-	bcu	UNCL	3	-
J1150.4 + 2418	OM 280	177.5801	+24.2983	0.209	Truebenbach+Darling (2017)	bll	BLLAC	0	Please note a misleading comment in the Vizier catalog, where the redshift is indicated as lower limit from the OCARS catalog, while in the individual note in the article is written that the value is measured from emission lines detected in the spectrum observed by the authors.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1150.6 + 4154	RBS 1040	177.6448	+41.9111	0.519	Table A2	bll	BLLAC	1	There is one measurement by White+ (2000): $z = 1.02$ based on a single weak line identified as MgII. This line was never confirmed by newer observations (Shaw+ 2013; Paiano+ 2020). The positions are consistent each others, and also the optical magnitudes, indicating that the source was observed at the same flux level. Curiously, the SDSS spectrum shows a feature flagged as an artifact more or less at the same wavelenght. Both White's spectrum and the SDSS one were taken at the Apache Point Observatory (11 years difference): perhaps it is a local artifact.
J1150.6 − 4823	PKS 1149 − 480	177.9077	−48.3683	-	-	bcu	UNCL	3	-
J1151.3 + 0957	NVSS J115117 + 095826	177.8221	+9.9740	0.609	Table A2	bcu	BLLAC	1	SDSS
J1151.5 + 5859	TXS 1148 + 592	177.8528	+58.9882	0.702	Table A2	bll	BLLAC	1	SDSS
J1151.5 − 1347	PMN J1151 − 1347	177.8749	−13.7975	0.636	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1151.6 − 2115	NVSS J115140 − 211345	177.9180	−21.2285	0.700	Table A2	bcu	UNCL	1	-
J1152.1 + 2837	GB6 J1152 + 2837	178.0446	+28.6225	0.441	SDSS	bll	BLLAC	0	-
J1152.3 − 0839	PKS B1149 − 084	178.0717	−8.6843	2.37	Hook+ (2003)	fsrq	FSRQ	0	-
J1152.8 + 3308	B2 1150 + 33A	178.2163	+33.1219	1.39	White+ (2000)	fsrq	FSRQ	0	SDSS.
J1153.0 + 8056	S5 1150 + 81	178.3021	+80.9748	1.25	Kühr+ (1981)	fsrq	FSRQ	0	-
J1153.3 − 1104	PKS B1150 − 108	178.3430	−11.0868	0.269	Osmer+Hewett (1991)	bcu	FSRQ	0	-
J1153.4 + 4931	4C +49.22	178.3519	+49.5191	0.334	Lynds+Wills (1968)	FSRQ	FSRQ	0	SDSS
J1153.6 − 2553	NVSS J115338 − 255412	178.4102	−25.9037	0.683	Table A2	bcu	UNCL	1	-
J1153.7 + 3822	B3 1151 + 386	178.4288	+38.3850	0.410	SDSS	bll	SEY	0	-
J1154.0 + 4037	B3 1151 + 408	178.4777	+40.6146	0.923	Hook+ (1996)	fsrq	NLS1	0	Henstock+ (1997) measured FWHM(Hβ)$\sim$ 1900 km/s. They had a spectrum with better S/N than SDSS at $\lambda \gtrsim 8000$ Å.
J1154.0 + 6018	RX J1154.0 + 6022	178.5189	+60.3724	1.12	Shaw+ (2012)	fsrq	FSRQ	0	SDSS
J1154.0 − 0010	1RXS J115404.9 − 001008	178.5190	−0.1694	0.254	Bauer+ (2000)	bll	BLLAC	0	SDSS
J1154.1 − 3243	PKS 1151 − 324	178.5257	−32.7119	0.437	Table A2	bll	UNCL	1	SIMBAD gives $z = 0.2$ from Mahony+ (2010), which in turn refer to a paper in preparation. However, nothing published was found in the following years.
J1155.5 − 3418	NVSS J115520 − 341718	178.8355	−34.2889	0.328	Table A2	bll	BLLAC	1	Desai+ (2019)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1155.8 + 6137	SDSS J115548.40 + 613553.8	178.9517	+61.5983	0.992	Table A2	bll	BLLAC	1	SDSS
J1156.6 + 0640	TXS 1154 + 069	179.2527	+6.6868	1.15	Table A2	bcu	UNCL	1	-
J1156.6 − 2248	NVSS J115633 − 225004	179.1385	−22.8346	0.890	Table A2	bll	UNCL	1	-
J1158.5 + 4824	GB1 1155 + 486	179.6115	+48.4212	2.04	Henstock+ (1997)	fsrq	FSRQ	0	SDSS
J1158.9 + 0818	RX J1158.8 + 0819	179.7217	+8.3287	-	-	bcu	AMB	2	The ambiguity derives from two nearby ($\sim 3''$) optical counterparts: SDSS-1 at $z = 0.291$ and SDSS-2 at $z = 0.338$. There is only one radio counterpart from FIRST ($\sim$ 25 mJy), which could be of one of the two galaxies or both (resolution $5''$).
J1159.0 + 0939	GB6 J1158 + 0937	179.7266	+9.6199	0.873	Table A2	bll	BLLAC	1	SDSS
J1159.2 − 2227	PKS 1156 − 221	179.7969	−22.4769	0.565	Wright+ (1979)	bcu	FSRQ	0	-
J1159.3 − 2142	PMN J1159 − 2142	179.8393	−21.7125	0.617	Healey+ (2008)	fsrq	FSRQ	0	-
J1159.5 + 2914	Ton 599	179.8826	+29.2455	0.725	Burbidge (1968)	fsrq	FSRQ	0	SDSS
J1159.5 − 0723	PMN J1159 − 0723	179.8828	−7.3999	0.368	Table A2	bll	UNCL	1	-
J1200.2 + 0201	87GB 115739.6+021927	180.0515	+2.0357	0.635	Table A2	bcu	UNCL	1	-
J1200.6 + 1229	GB6 J1200 + 1230	180.1668	+12.5176	0.656	Table A2	bll	BLLAC	1	SDSS
J1200.7 + 2008	TXS 1158 + 204	180.2380	+20.1457	0.430	Table A2	bcu	UNCL	1	-
J1200.8 − 1429	NVSS J120055 − 143040	180.2297	−14.5112	0.698	Table A2	bcu	UNCL	1	-
J1201.1 − 0332	NVSS J120111 − 033219	180.2964	−3.5388	0.755	Glickman+ (2007)	bcu	AMB	0	No spectrum available, but Glickman+ (2012) classified it as Narrow-Line AGN or Starburst, with [OIII]/Hβ $\sim$ 0.89. However, radio spectrum is flat $\alpha_{0.15-1.4\,\mathrm{GHz}} \sim 0$. NLS1?
J1201.7 + 1429	OM 198	180.4345	+14.5268	0.601	Table A2	bll	BLLAC	1	SDSS
J1202.4 + 4442	B3 1159 + 450	180.5361	+44.7396	0.297	SDSS	bll	BLLAC	0	Please note it is only $12''$ far from NGC 4051
J1202.5 + 3852	NVSS J120257 + 385147	180.7378	+38.8632	0.771	Table A2	bll	BLLAC	1	SDSS
J1202.5 − 0528	PKS 1200 − 051	180.6426	−5.4674	0.381	Wright+ (1979)	fsrq	NLS1	0	FWHM(Hβ)$\sim$ 1340 km/s, confirmed by Wilkes (1986), who found FWHM(Hβ)$\sim$ 1140 km/s. Optical spectrum available here from Monroe+ (2016)
J1202.9 + 5141	TXS 1200 + 519	180.7796	+51.6752	0.0631	Ulrich (1976)	bcu	MIS	0	Radiogalaxy in the cluster A1452. Galaxy dominated optical spectrum. Steep radio spectrum, complex radio morphology: wide-angle tail? head-tail? (Miley+Harris 1977, Sakelliou+Merrifield 2000).
J1203.1 + 6031	SBS 1200 + 608	180.7646	+60.5220	0.065	Martel+Osterbrock (1994)	bll	SEY	0	SDSS, LINER, S0 host galaxy.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1203.3 + 1119	TXS 1200 + 115	180.8041	+11.3048	1.2	Flesch (2021)	bcu	FSRQ	1	Flesch also classified the source as quasar.
J1203.4 − 3925	PMN J1203 − 3926	180.8245	−39.4392	0.227	Peña-Herazo+ (2017)	bll	BLLAC	0	-
J1204.0 + 1146	1RXS J120413.0 + 114549	181.0505	+11.7654	0.296	Shaw+ (2013)	bll	BLLAC	0	SDSS
J1204.2 − 0709	1RXS J120417.0 − 070959	181.0694	−7.1692	0.184	Mamon+ (2001)	bll	BLLAC	0	Landt+ (2001) set the same value as tentative, but later (Landt+Bignall 2008) confirmed it.
J1204.8 + 0407	MG1 J120448 + 0408	181.2153	+4.1372	1.95	SDSS	fsrq	FSRQ	0	-
J1205.7 − 2635	PKS 1203 − 26	181.3884	−26.5679	0.790	Wilkes+ (1983)	fsrq	FSRQ	0	-
J1205.8 + 3321	SDSS J120542.82 + 332146.9	181.4284	+33.3631	1.01	SDSS	bcu	FSRQ	0	SDSS shows a possible contaminating source at $\sim 3''$ South. There is a LAMOST spectrum almost featureless, perhaps a BL Lac (radio emission not resolved, confusion with the above cited source). However, the soft gamma-ray spectrum ($\Gamma \sim 2.6$) suggests that the responsible of the gamma-ray emission is the quasar.
J1207.2 − 0524	1RXS J120722.5 − 052442	181.8438	−5.4117	-	-	bcu	UNCL	3	-
J1207.7 − 0106	AT20G J120741 − 010630	181.9237	−1.1102	1.01	Wilkes+ (1983)	fsrq	FSRQ	0	LAMOST
J1207.7 − 2229	NVSS J120736 − 223036	181.9044	−22.5099	0.760	Table A2	bll	BLLAC	1	6dF
J1208.1 + 3017	GB6 J1208 + 3015	182.0180	+30.2640	0.618	Table A2	bll	BLLAC	1	SDSS
J1208.2 − 7810	PKS 1205 − 778	182.0765	−78.1635	-	-	bcu	UNCL	3	-
J1208.4 + 6121	RGB J1208 + 613	182.1547	+61.3518	0.275	SDSS	bll	MIS	0	Ultrasteep radio spectrum ($\alpha \sim -1.5$, Bornacini+ 2010), classified as FRII by Miraghei+Best (2017)
J1208.9 + 5441	TXS 1206 + 549	182.2261	+54.6995	1.34	Shaw+ (2012)	fsrq	NLS1	0	SDSS, classified as NLS1 by Rakshit+ (2021). It is the farthest NLS1.
J1209.0 − 4630	SUMSS J120905 − 462944	182.2716	−46.4968	-	-	bcu	UNCL	3	-
J1209.4 + 4118	B3 1206 + 416	182.3449	+41.3282	0.505	Table A2	bll	BLLAC	1	Shaw+ 2013
J1209.4 + 7608	2MASS J12093020 + 7609120	182.3762	+76.1533	0.486	Table A2	bcu	UNCL	1	-
J1209.7 + 2548	B2 1207 + 26	182.4379	+25.7844	1.44	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1209.8 + 1810	MG1 J120953 + 1809	182.4657	+18.1686	0.845	SDSS	fsrq	FSRQ	0	-
J1211.0 − 3800	PMN J1211 − 3754	182.7573	−37.9219	-	-	bcu	UNCL	3	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1211.6 + 3901	FIRST J121134.2 + 390053	182.8927	+39.0149	0.616	Rector+ (1999)	bll	BLLAC	0	Stocke+ (1991) reported $z = 0.331$ on the basis of a strong line identified as [OII], but a reanalysis of the same spectrum by Rector+ (1999) resulted in $z = 0.616$ in the basis of the Ca H+K break. Landt+ (2002) reported $z = 0.602$, but it seems a typo, because they refer to Rector+ (2000), which in turn refer again to Rector+ (1999).
J1211.6 − 2735	NVSS J121135 − 273615	182.8992	−27.6044	0.760	Table A2	bcu	UNCL	1	-
J1212.0 + 2242	RX J1211.9 + 2242	182.9945	+22.7090	0.453	Beckmann+ (2003)	bll	BLLAC	0	SDSS
J1212.0 − 2326	PMN J1212 − 2327	183.0189	−23.4617	0.666	Desai+ (2019)	bcu	BLLAC	0	-
J1212.7 − 1402	1RXS J121240.3 − 140141	183.1679	−14.0282	0.244	Table A2	bcu	UNCL	1	-
J1213.0 + 5129	1RXS J121301.8 + 512942	183.2534	+51.4932	0.555	Table A2	bll	BLLAC	1	SDSS
J1213.3 − 2618	RBS 1080	183.3464	−26.3022	0.278	Fischer+ (1998)	bll	BLLAC	0	-
J1213.6 + 1306	4C +13.46	183.3840	+13.1225	1.14	Lynds+Wills (1972)	fsrq	FSRQ	0	SDSS
J1213.7 + 6423	NVSS J121348 + 642524	183.4534	+64.4222	0.734	Table A2	bll	BLLAC	1	SDSS
J1213.8 − 4345	PMN J1213 − 4343	183.4600	−43.7235	-	-	bll	UNCL	3	-
J1214.6 − 1926	PKS B1211 − 190	183.5154	−19.3619	0.149	Murdoch+ (1984)	bcu	NLS1	0	FWHM(Hβ)$\sim$ 2036 km/s.
J1215.0 + 1656	TXS 1212 + 171	183.7666	+16.9105	1.13	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J1215.1 + 0731	1ES 1212 + 078	183.7957	+7.5346	0.136	Perlman+ (1996)	bll	BLLAC	0	SDSS
J1215.1 + 3513	7C 1212 + 3524	183.7869	+35.1371	0.504	Table A2	bll	BLLAC	1	SDSS
J1215.1 + 5002	IVS B1212 + 503	183.7533	+50.0376	0.622	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1215.8 − 1733	PKS 1213 − 17	183.9448	−17.5293	-	-	bcu	UNCL	3	Source hidden by an extremely bright star in foreground
J1215.8 − 3732	PMN J1216 − 3734	184.0084	−37.5703	-	-	bcu	UNCL	3	-
J1216.1 + 0930	TXS 1213 + 097	184.0259	+9.4860	0.094	Bauer+ (2000)	bll	SEY	0	SDSS
J1216.1 − 0242	1RXS J121603.6 − 024302	184.0136	−2.7183	0.219	Table A2	bll	BLLAC	1	Huchra+ (1992) reported $z = 0.169$ and a BLLAC classification (see also CfA ZCat), but Bauer+ (2000) wrote an uncertain $z = 0.3585$. LAMOST inconclusive
J1217.9 + 3007	B2 1215 + 30	184.4670	+30.1168	0.129	Paiano+ (2017)	BLL	BLLAC	0	Padovani+ (1995) reported $z = 0.237$ from Murphy+ (1993), which in turn wrote that they took it from NED; Bade+ (1998) reported $z = 0.130$ from a paper in preparation by Perlman, but no such published paper was found. The Paiano's spectrum seems to be the first ever published.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1218.0 − 0028	PKS 1215 − 002	184.4947	−0.4962	0.419	Dunlop+ (1989	bll	BLLAC	0	SDSS
J1218.5 − 0119	PKS 1216 − 010	184.6455	−1.3318	0.498	Table A2	bll	BLLAC	1	Shaw+ (2013). Downes+ (1986) reported $z = 0.415$ from a private communication of Ann Savage, but neither published spectrum nor confirmation of this value were found.
J1219.0 + 4827	ON 428	184.7767	+48.4989	1.07	Stickel+Kuhr (1994)	fsrq	FSRQ	0	SDSS
J1219.0 − 4827	PMN J1219 − 4826	184.7594	−48.4411	0.150	Klindt+ (2017)	bll	BLLAC	0	-
J1219.6 + 0550	NGC 4261	184.8467	+5.8249	0.00734	Huchra+ (1983)	rdg	MIS	0	FRI, Chiaberge+ (1999)
J1219.7 + 0444	NVSS J121945 + 044621	184.9374	+4.7729	0.138	Table A2	bll	BLLAC	1	SDSS
J1219.7 − 0313	1RXS J121946.0 − 031419	184.9405	−3.2400	0.299	SDSS	bll	BLLAC	0	-
J1219.9 + 6056	87GB 121716.0 + 611442	184.9109	+60.9656	0.851	Table A2	bcu	UNCL	1	-
J1220.1 + 3432	GB2 J1217 + 348	185.0346	+34.5227	0.643	Hewett+Wild (2010)	bll	BLLAC	1	-
J1220.1 + 7105	S5 1217 + 71	185.0151	+71.0920	0.451	Stickel+Kuhr (1996)	fsrq	AMB	0	No classification is possible, because neither a spectrum, nor line information were published.
J1220.2 − 3713	2MASS J12201982 − 3714137	185.0825	−37.2373	0.3	Table A2	bcu	UNCL	1	-
J1221.3 + 3010	PG 1218 + 304	185.3414	+30.1770	0.184	Bade+ (1998)	bll	BLLAC	0	Bade reported a personal communication by Perlman, who did not publish the spectrum, but SDSS confirmed the value. Before Bade, a value of $z = 0.13$ was often adopted, and it was estimated on the basis of the imaging of the host galaxy (Weistrop+ 1981).
J1221.5 + 2814	W Comae	185.3820	+28.2329	0.102	Weistrop+ (1985)	bll	BLLAC	0	The value was challenged by Finke+ (2008), because they did not detect any feature. However, Paiano+ (2017) confirmed the Weistrop's value. Additionally, SDSS spectrum clearly shows [OIII] line at $\sim$ 5500 Å, but the automatic pipeline curiously missed it. The manual analysis by Shaw+ (2013) revealed it. It is likely that the featureless spectrum taken by Finke was due to high jet activity.
J1222.0 − 4121	PKS 1219 − 411	185.5423	−41.3826	-	-	bcu	UNCL	3	-
J1222.5 + 0414	4C 04.42	185.5940	+4.2210	0.966	Wilkes+ (1983)	fsrq	FSRQ	0	SDSS
J1223.0 + 1100	SDSS J122307.24 + 110038.2	185.7802	+11.0106	1.15	Table A2	bcu	BLLAC	1	SDSS
J1223.3 + 1213	MG1 J122332 + 1208	185.8683	+12.1257	0.998	Table A2	bll	UNCL	1	-
J1223.6 − 3032	NVSS J122337 − 303246	185.9042	−30.5473	0.200	Table A2	bll	BLLAC	1	Desai+ (2019)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1223.8 + 4649	RX J1223.8 + 4651	185.9712	+46.8467	0.261	SDSS	bll	BLLAC	0	-
J1223.8 + 8039	S5 1221 + 80	185.9187	+80.6679	0.469	Table A2	bll	BLLAC	1	Shaw+ (2013). Some papers reported $z = 0.47$ from the OCARS catalog, which in turn refers to NED and SIMBAD. Origin of this value is unknown.
J1223.9 + 5000	SBS 1221 + 503	186.0413	+50.0321	1.06	Stepanian (2005)	fsrq	FSRQ	0	SDSS
J1223.9 + 7954	NVSS J122358 + 795329	185.9920	+79.8912	0.375	Paiano+ (2017)	bll	BLLAC	0	-
J1224.1 + 2239	TXS 1221 + 229	186.0043	+22.6610	0.479	Table A2	bll	BLLAC	1	SDSS
J1224.4 + 2436	MS 1221.8 + 2452	186.1008	+24.6065	0.219	Stocke+ (1991)	bll	BLLAC	0	SDSS
J1224.7 − 8313	PKS 1221-82	186.2266	−83.2195	-	-	bcu	UNCL	3	-
J1224.9 + 2122	4C +21.35	186.2269	+21.3796	0.434	Burbidge+Kinman (1966)	FSRQ	FSRQ	0	SDSS. It might be a CLAGN (changing SED), see Foschini+ (2011)
J1224.9 + 4334	B3 1222 + 438	186.2146	+43.5887	0.958	SDSS	bll	AMB	0	The SDSS spectrum (taken on MJD 57785) is rather noisy, but the MgII line seems to be reliable. Previous SDSS spectra were too much noisy and Shaw+ (2013) reported only lower limits (MJD 53112). Sowards-Emmerd+ (2003) took another spectrum and reported $z = 1.872$, with a FSRQ identification. They identified the feature at $\sim$ 5500 Å as CIII, while SDSS identified it as MgII. The latter seems to be more reliable, although all the available spectra are rather noisy; therefore, we decided for the AMB classification.
J1225.0 + 0330	4C +03.23	186.2184	+3.5140	0.956	Hewitt+Burbidge (1987)	fsrq	FSRQ	0	Hewitt+Burbidge (1987) referred to Bolton+Wall (1970), but the latter did not report any redshift. However, the value is confirmed by SDSS
J1225.3 − 3446	1RXS J122534.0 − 344737	186.4034	−34.7894	0.260	Table A2	bcu	BLLAC	1	Rajagopal+ (2021)
J1225.4 − 1550	1RXS J122525.2 − 155251	186.3554	−15.8881	0.272	Table A2	bcu	UNCL	1	-
J1225.5 − 2851	AT20G J122515 − 284956	186.3146	−28.8315	1.72	Table A2	bcu	UNCL	1	-
J1225.6 − 7313	PMN J1225 − 7313	186.3970	−73.2277	0.294	Table A2	bcu	UNCL	1	-
J1226.7 + 0637	1RXS J122645.2 + 063906	186.6843	+6.6481	0.163	Table A2	bll	BLLAC	1	Peña-Herazo+ (2021). Chang+ (2019) reported $z = 0.583$ as a firm spectroscopic measurement, but it seems to be derived from SDSS-DR13, which is not firm, as there are other values in the other releases (SDSS).
J1226.8 − 1329	PMN J1226 − 1328	186.7267	−13.4775	0.456	Mao (2011)	bll	BLLAC	1	-
J1227.1 − 4437	PKS 1224 − 443	186.8612	−44.6107	0.110	Massardi+ (2008)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1228.7 + 4858	TXS 1226 + 492	187.2157	+48.9670	1.72	Shaw+ (2012)	fsrq	FSRQ	0	SDSS
J1229.0 + 0202	3C 273	187.2779	+2.0524	0.158	Schmidt (1963)	FSRQ	FSRQ	0	LAMOST (1, 2, 3)
J1230.2 + 2517	ON 246	187.5587	+25.3020	0.555	Table A2	bll	BLLAC	1	Nass+ (1996) reported $z = 0.135$ (neither spectrum nor line information published), but Laurent-Muehleisen+ (1999) wrote that it is incorrect on the basis of a personal communication by Bade (1998). Beckmann+ (2003), including Bade, confirmed $z = 0.135$ (again without spectrum and/or line information). More recent observations by Shaw+ (2013), Massaro+ (2015), and Paiano+ (2017) all failed to confirm the redshift and all reported featureless spectra. Perhaps the jet activity overwhelmed the line emission during the recent observations, but it is not possible to establish the reliability of old observations, since no spectra were published.
J1230.8 + 1223	M 87	187.7059	+12.3911	0.00436	Humason+ (1956)	rdg	MIS	0	See McConnell+Ma (2013) for more recent results on z
J1230.9 + 3711	WISEA J123124.08 + 371102.2	187.8504	+37.1839	0.218	SDSS	bll	MIS	0	Classified as FRII by Kozieł-Wierzbowska+Stasińska (2011).
J1231.5 + 1421	GB6 J1231 + 1421	187.8496	+14.3568	0.256	Wolter+ (1997)	bll	BLLAC	0	SDSS
J1231.6 + 6415	MS 1229.2 + 6430	187.8808	+64.2384	0.163	Stocke+ (1991)	bll	BLLAC	0	SDSS
J1231.7 + 2847	B2 1229 + 29	187.9316	+28.7972	0.236	Beckmann+ (2003)	bll	BLLAC	0	White+ (2000) first reported $z = 1.03$ on the basis of a large (doubtful) feature centered at $\sim$ 5700 Å identified as MgII. Landt+Bignall (2008) found a featureless spectrum and set $z > 0.878$. Shaw+ (2013) confirmed the Beckmann's value, but with an uncertainty flag. SDSS inconclusive (but it does not show the large feature reported by White)
J1232.5 + 4821	GB1 1230 + 486	188.1449	+48.3592	1.59	Healey+ (2008)	fsrq	FSRQ	0	-
J1232.5 − 3720	NVSS J123235 − 372051	188.1500	−37.3476	-	-	bcu	UNCL	3	-
J1233.1 + 1703	RX J1233.0 + 1701	188.2714	+17.0259	0.719	Table A2	bll	BLLAC	1	SDSS
J1233.6 + 5027	TXS 1231 + 507	188.4553	+50.4397	0.207	Falco+ (1998)	bll	AMB	0	SDSS. Steep radio spectrum $\alpha \sim 0.55 - 0.71$ from Specfind, likely a MIS, but Caccianiga+ (2002) classified it as type 0 (BL Lac), passive elliptical galaxy.
J1233.7 − 0144	NVSS J123341 − 014426	188.4222	−1.7399	0.581	Table A2	bll	BLLAC	1	Paiano+ (2020)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1234.7 − 0434	NVSS J123444 − 043623	188.6842	−4.6062	0.629	Table A2	bcu	UNCL	1	Paiano+ (2019) suggested a different counterpart on the basis of the *Swift*/XRT follow-up, which is $\sim 3.7'$ distant from the 4FGL counterpart. Paiano's source is classified as Seyfert 2 galaxy at $z = 0.276$, but no radio detection is reported.
J1236.3 + 3858	RX J1236.4 + 3859	189.0959	+39.0003	0.389	SDSS	bll	BLLAC	0	Hook+ (1998) reported a featureless spectrum, likely due to the jet activity.
J1237.0 + 3019	RX J1237.0 + 3020	189.2733	+30.3348	0.700	Bade+ (1998)	bll	BLLAC	0	-
J1237.8 + 6256	1H 1241 + 626	189.4128	+62.9786	0.297	Gioia+ (1984)	bll	BLLAC	0	SDSS
J1238.1 − 4541	PMN J1238 − 4541	189.5251	−45.6916	0.361	Table A2	bll	BLLAC	1	Peña-Herazo+ (2020)
J1238.3 − 1959	PMN J1238 − 1959	189.6016	−19.9871	0.703	Table A2	bll	BLLAC	1	Ricci+ (2015)
J1238.5 − 1201	TXS 1235 − 117	189.5309	−11.9902	0.293	Jones+ (2009)	fsrq	FSRQ	0	Hewitt+Burbidge (1993) reported $z = 1.32$ on the basis of a personal communication by Wills+ (1987), who identified two features as CIII and CIV (spectrum never published). However, the 6dF spectrum clearly shows prominent emission lines of the Hβ-[OIII] complex. [OIII] is clearly stronger than Hβ, which in turn displays a red wing.
J1239.4 + 0728	PKS 1236 + 077	189.8525	+7.5048	0.552	Table A2	bll	BLLAC	1	SDSS. White+ (1998) suggested a tentative $z = 0.400$ on the basis of a few weak lines (MgII, [OIII], Hα) measured on a noisy spectrum (not published). This value has been always taken for granted, although never confirmed.
J1239.5 + 0443	MG1 J123931 + 0443	189.8865	+4.7181	1.76	Halpern+ (2003)	fsrq	FSRQ	0	SDSS
J1240.4 − 2606	PMN J1240 − 2608	190.1209	−26.1553	1.18	Table A2	bcu	UNCL	1	-
J1241.3 + 4236	B3 1239 + 429	190.3751	+42.6606	0.619	SDSS	bcu	BLLAC	0	Borderline radio spectrum.
J1241.5 + 3439	RX J1241.6 + 3440	190.4217	+34.6756	0.266	Table A2	bll	BLLAC	1	SDSS
J1241.8 − 1456	RX J1241.8 − 1455	190.4557	−14.9329	0.133	Table A2	bll	BLLAC	1	Landoni+ (2013)
J1241.9 + 0636	1ES 1239 + 069	190.4512	+6.6003	1.56	Table A2	bll	BLLAC	1	Perlman+ (1996) reported $z = 0.150$ in the basis of the host galaxy features (spectrum unpublished), but it was never confirmed. Sbarufatti+ (2006) and Landoni+ (2013) both reported featureless spectra. SDSS inconclusive.
J1242.6 + 7635	1RXS J124231.4 + 763419	190.6333	+76.5733	0.485	Table A2	bll	UNCL	1	-
J1242.9 + 7315	S5 1241 + 73	190.7967	+73.2665	0.074	Marchã+ (1996)	bcu	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1243.0 + 3950	SDSS J124318.91 + 395117.7	190.8288	+39.8549	1.06	Table A2	bcu	AMB	1	SDSS spectrum is quite noisy, but it shows an emission line at ∼ 6200 Å, which is unlikely identified as Lyα. If it is MgII, the tentative redshift would be ∼ 1.2; the source would be a FSRQ.
J1243.2 + 3627	Ton 116	190.8031	+36.4622	0.5	Meisner+Romani (2010)	bll	BLLAC	1	-
J1243.9 − 0218	PMN J1243 − 0218	190.9687	−2.3107	0.788	Table A2	bcu	BLLAC	1	Healey+ (2008)
J1244.2 − 4956	SUMSS J124422 − 495422	191.0957	−49.9062	0.301	Table A2	bcu	UNCL	1	-
J1244.5 + 1616	SDSS J124444.35 + 161621.7	191.1848	+16.2727	0.456	SDSS	bll	BLLAC	0	-
J1245.1 + 5709	1RXS J124510.5 + 571020	191.2917	+57.1651	0.542	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1245.8 + 0232	NVSS J124533 + 022825	191.3908	+2.4737	0.710	Table A2	bll	BLLAC	1	SDSS
J1246.3 + 0112	PMN J1246 + 0113	191.5106	+1.2219	0.386	Vanden Berk+ (2002)	bll	BLLAC	0	See also Gal-Yam+ (2002). SDSS
J1246.7 − 2548	PKS 1244 − 255	191.6950	−25.7970	0.638	Wilkes (1986)	fsrq	NLS1	0	Wilkes reports also FWHM(Hγ)∼ 1920 km/s and FWHM(Hδ)∼ 1760 km/s.
J1247.0 + 4421	RX J1246.9 + 4423	191.7530	+44.3888	0.569	Landoni+ (2018)	bll	BLLAC	0	SDSS automatic pipeline fails to catch the narrow emission line at ∼ 7858 Å, identified as [OIII] by Landoni.
J1248.3 + 5820	PG 1246 + 586	192.0783	+58.3413	0.508	Table A2	bll	BLLAC	1	Paiano+ (2017)
J1248.7 + 5127	RX J1248.4 + 5128	192.1429	+51.4689	0.351	Sowards-Emmerd+ (2005)	bll	BLLAC	0	SDSS
J1248.9 + 4840	87GB 124632.9 + 485605	192.2123	+48.6648	1.86	SDSS	bcu	FSRQ	0	-
J1249.2 − 2809	NVSS J124919 − 280833	192.3305	−28.1429	0.103	Table A2	bcu	UNCL	1	-
J1249.3 − 0545	GALEXASC J124919.46 − 054539.7	192.3307	−5.7610	0.223	Table A2	bcu	UNCL	1	-
J1249.8 + 3707	2MASS J12494675 + 3707474	192.4448	+37.1300	0.883	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1250.6 + 0217	PKS 1247 + 025	192.6358	+2.2756	0.955	Sandrinelli+ (2013)	bll	BLLAC	0	SDSS noisy, but confirms the z.
J1250.8 + 3117	NVSS J125051 + 311706	192.7160	+31.2850	0.304	Table A2	bcu	UNCL	1	-
J1251.2 + 1039	1RXS J125117.4 + 103914	192.8245	+10.6520	0.245	Shaw+ (2013)	bll	BLLAC	0	SDSS (quite noisy)
J1251.3 − 0201	TXS 1248 − 017	192.8266	−2.0354	0.414	Table A2	bcu	UNCL	1	-
J1251.3 − 1719	PMN J1251 − 1717	192.8103	−17.2870	0.606	Healey+ (2008)	fsrq	FSRQ	0	-
J1253.2 + 5301	S4 1250 + 53	193.2997	+53.0199	0.59	Meisner+Romani (2010)	bll	BLLAC	1	-
J1253.5 − 3934	1RXS J125341.2 − 393200	193.4212	−39.5331	0.179	Piranomonte+ (2007)	bll	BLLAC	0	6dF
J1253.8 + 0327	MG1 J125348 + 0326	193.4459	+3.4418	0.066	Grogin+ (1998)	bll	BLLAC	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1253.8 + 6242	1RXS J125400.1 + 624303	193.4971	+62.7160	0.515	Table A2	bll	BLLAC	1	SDSS
J1254.2 − 2205	NVSS J125422 − 220413	193.5936	−22.0705	0.7	Table A2	bcu	UNCL	1	-
J1254.5 + 2210	TXS 1252 + 224	193.6386	+22.1843	0.525	Table A2	bll	BLLAC	1	SDSS
J1254.9 + 1138	ON 187	193.6594	+11.6850	0.872	Bolton+ (1965)	fsrq	FSRQ	0	SDSS
J1254.9 − 4426	PKS 1252 − 441	193.7396	−44.4157	0.0411	Jones+ (2009)	bll	BLLAC	0	6dF
J1256.1 − 0547	3C 279	194.0465	−5.7893	0.536	Marziani+ (1996)	FSRQ	FSRQ	0	First redshift $z = 0.540$ by Burbidge+Rosenberg (1965)
J1256.2 − 1146	PMN J1256 − 1146	194.0665	−11.7770	0.0579	Jones+ (2009)	bll	BLLAC	0	6dF
J1257.2 + 3646	RX J1257.3 + 3647	194.3191	+36.7875	0.531	Shaw+ (2013)	bll	BLLAC	0	There is a tentative $z = 0.280$ reported by Braccesi+ (1970) on the basis of an unpublished work by Lynds+ (1969). This value was taken for granted and reported in many catalogs, until the Shaw's measurement.
J1257.6 + 2413	1ES 1255 + 244	194.3830	+24.2111	0.141	Perlman+ (1996)	bll	BLLAC	0	SDSS. Please note that there is a typo in Table 1 of Perlman+ (1996), where is $z = 0.212$, but his Table 4 reported the correct value of $z = 0.141$, also consistent with the spectrum published in his Figure 4.
J1257.8 + 3228	ON 393	194.4885	+32.4915	0.806	SDSS	fsrq	FSRQ	0	Healey+ (2008) reported $z = 1.65$ on the basis of their own spectroscopy (no spectrum published). It is likely that they have misidentified the most prominent line ($\sim$ 5000 Å) as CIII] instead of MgII.
J1258.3 + 6121	NVSS J125820 + 612049	194.5866	+61.3460	0.204	Table A2	bll	BLLAC	1	SDSS spectrum is extremely noisy and calculated $z = 0.224$, based on features identified as Ca H+K and Hα+[NII]. [OIII] is corresponding to a strong absorption feature. No other published spectra.
J1258.6 − 1759	PKS B1256 − 177	194.6596	−18.0009	1.96	Hook+ (2003)	fsrq	FSRQ	0	-
J1258.7 + 5143	NVSS J125825 + 514225	194.6058	+51.7073	0.441	Table A2	bcu	UNCL	1	-
J1258.7 − 0452	RBS 1194	194.7002	−4.7959	0.418	Paiano+ (2021)	bll	BLLAC	0	Scwhope+ (2000) proposed a BLLAC classification with $z = 0.586$ flagged as uncertain. No spectrum published.
J1258.8 − 2219	PKS 1256 − 220	194.7270	−22.3253	1.31	Dekker+D'Odorico (1984)	fsrq	FSRQ	0	Note: the full text file available on NASA/ADS is not complete.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1259.1 − 2311	PKS B1256 − 229	194.7853	−23.1774	0.481	Sbarufatti+ (2005)	bll	FSRQ	0	Drinkwater+ (1997) took a broad-band spectrum (∼3200–10,400 Å) and reported $z = 1.365$ on the basis of two strong emission lines at ∼ 8800 and ∼ 9700 Å, but they did not write the identification of the lines (the latter might be Hδ). By taking for good the Sbarufatti's value, the lines in the Drinkwater spectrum should be HeI and Hα, respectively. The lack of these two lines in Sbarufatti's spectrum is due to a smaller waveband (∼4000–8000 Å).
J1259.5 + 2332	NVSS J125936 + 233047	194.9012	+23.5131	0.237	Table A2	bcu	UNCL	1	-
J1259.7 − 3223	LEDA 4075145	194.9576	−32.3914	-	-	bll	BLLAC	2	6dF
J1259.8 − 3749	NVSS J125949 − 374856	194.9575	−37.8162	0.223	Table A2	bll	BLLAC	1	Ricci+ (2015)
J1300.0 + 1753	SDSS J130008.52 + 175538.0	195.0355	+17.9271	0.834	Table A2	bll	BLLAC	1	SDSS
J1300.4 + 1416	OW 197	195.0872	+14.2885	1.11	SDSS	fsrq	FSRQ	0	-
J1301.5 + 4413	GB6 J1301 + 4416	195.4430	+44.2720	0.520	Table A2	bll	BLLAC	1	SDSS
J1301.6 + 3336	MG2 J130126 + 3337	195.3715	+33.6168	1.01	SDSS	fsrq	FSRQ	0	-
J1301.6 + 4056	RX J1301.7 + 4056	195.4402	+40.9402	0.572	Table A2	bll	BLLAC	1	SDSS
J1302.3 + 6901	TXS 1300 + 693	195.6580	+69.0477	0.568	Hook+ (1996)	bcu	AMB	0	It is not possible to classify this source, because there is neither spectrum published, nor indication of the line strengths. The spectrum is missing in the Hook's paper: misprint? Additionally, Falco+ (1998) did not publish the spectrum and reported a list of lines, but without any indication of equivalent width. They also wrote that the host is a late-type galaxy, which suggests a possible SEY/NLS1 classification.
J1302.7 + 4750	TXS 1300 + 481	195.7029	+47.9196	0.141	SDSS	bll	MIS	0	FRI, Capetti+ (2017). Warning: the 4FGL coordinates differ by ∼ 7.6″ from the radio position of the counterpart.
J1302.8 + 5748	TXS 1300 + 580	195.7186	+57.8104	1.09	Healey+ (2008)	bll	CLAGN	0	Healey measured the redshift and classified the source as FSRQ, but neither spectrum, nor line information are published. Hentstock+ (1997) found a featureless spectrum, and so is the SDSS.
J1303.0 + 2434	MG2 J130304 + 2434	195.7634	+24.5655	0.993	Glickman+ (2007)	bll	BLLAC	0	Shaw+ (2013) confirmed BLLAC classification, but on the basis of a featureless spectrum, likely due to an increased jet activity.
J1303.6 − 4622	PMN J1303 − 4621	195.9178	−46.3507	1.66	Shaw+ (2012)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1304.0 + 3704	WISE J130407.31 + 370908.1	196.0305	+37.1523	0.940	SDSS	bll	BLLAC	0	-
J1304.2 − 2412	PMN J1304 − 2412	196.0696	−24.2047	1.26	Table A2	bll	UNCL	1	-
J1304.3 − 4353	1RXS J130421.2 − 435308	196.0875	−43.8862	-	-	bll	BLLAC	2	Shaw+ (2013), Masetti+ (2013)
J1304.6 − 0348	PKS 1302 − 035	196.1818	−3.7674	1.25	Wills+Lynds (1978)	fsrq	FSRQ	0	-
J1304.9 − 2107	PKS B1302 − 208	196.2461	−21.1118	0.938	Table A2	bcu	UNCL	1	-
J1305.3 + 5118	IERS B1303 + 515	196.3448	+51.2778	0.785	SDSS	nlsy1	NLS1	0	Classified as NLS1 by Zhou+ (2006)
J1305.6 + 7853	S5 1304 + 79	196.2501	+78.9099	0.610	Table A2	bll	UNCL	1	-
J1305.9 + 3858	2MASS J13053124 + 3855218	196.3800	+38.9225	0.376	SDSS	bll	MIS	0	Steep radio spectrum, classified as one-sided radio galaxy by Sikora+ (2013)
J1306.3 + 1113	TXS 1303 + 114	196.5802	+11.2277	0.086	Afanasiev+ (2003)	rdg	MIS	0	SDSS. Classified as FRI by Miraghei+Best (2017) and Capetti+ (2017)
J1306.7 − 2148	PKS 1304 − 215	196.6752	−21.7975	0.126	Grandi (1983)	rdg	MIS	0	Grandi suggested a classification as BLRG, but the Hβ is rather weak and [OIII] lines are strong (obscuration?). Eracleous+Halpern (1994, 2004) correctly identified it as NLRG
J1307.6 − 4259	1RXS J130737.8 − 425940	196.9083	−42.9942	-	-	bll	BLLAC	2	Titov+ (2017)
J1308.5 + 3547	5C 12.291	197.0988	+35.7770	1.05	Vermeulen+ (1996)	fsrq	FSRQ	0	SDSS
J1309.4 + 4305	B3 1307 + 433	197.3564	+43.0849	0.694	Shaw+ (2013)	bll	BLLAC	0	SDSS
J1309.7 + 1153	4C +12.46	197.3914	+11.9068	0.659	Table A2	bll	BLLAC	1	Landoni+ (2013)
J1310.2 − 1158	TXS 1307 − 117	197.5519	−11.9630	0.140	Bauer+ (2000)	bll	BLLAC	0	-
J1310.5 + 3221	OP 313	197.6194	+32.3455	0.996	Perry+ (1978)	fsrq	FSRQ	0	SDSS
J1310.6 + 2449	CRATES J131038.52 + 244822.1	197.6605	+24.8062	0.226	de Menezes+ (2020)	bll	BLLAC	0	-
J1310.9 + 5514	TXS 1308 + 554	197.7634	+55.2318	0.926	Henstock+ (1997)	fsrq	NLS1	0	SDSS. Henstock reported FWHM(Hβ) $\sim$ 22/9371 Å $\sim$700 km/s, but both their spectrum and SDSS one have Hβ in the extreme red and noisy part of the spectrum. The complex Hβ+[OIII] is quite contaminated.
J1311.0 + 0034	RX J1311.1 + 0035	197.7770	+0.5861	0.384	Table A2	bll	BLLAC	1	Shaw+ (2013)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1311.0 + 3233	RX J131058.8 + 323335	197.7475	+32.5596	1.64	Machalski+Engels (1994)	fsrq	FSRQ	0	SDSS. Puchnarewicz+ (1997) set $z = 2.34$ on the basis of a weak feature (only upper limits on EW and luminosity were available; no spectrum published) identified as CIII]. That work was in the framework of the ROSAT International X-ray/Optical Survey (RIXOS, FID 265, Source 1). However, later, in the definitive catalogue, Mason+ (2000) adopted Machalski+Engels' value.
J1311.8 + 2057	MG2 J131144 + 2052	197.9310	+20.8690	0.724	Table A2	bcu	MIS	1	Classified as FRII by van Velzen+ (2015) on the basis of radio morphology. Steep radio spectrum.
J1311.8 + 3954	FIRST J131146.0 + 395317	197.9421	+39.8881	0.550	Table A2	bll	BLLAC	1	SDSS
J1312.4 − 2156	PKS 1309 − 216	198.1315	−21.9398	0.375	Table A2	bll	BLLAC	1	Shaw+ (2013) suggested a tentative $z = 1.6$ based on a single weak feature identified as MgII (spectrum published). It is flagged as uncertain.
J1312.6 + 4828	GB 1310 + 487	198.1806	+48.4753	0.638	Sokolovsky+ (2014)	bcu	AMB	0	Falco+ (1998) proposed an uncertain $z = 0.313$, while Healey+ (2008) reported $z = 0.501$ and a FSRQ classification. Sokolovsky+ (2014) found that the AGN has $z = 0.638$ and is behind a foreground galaxy at $z = 0.5$. The spectrum is rather ambiguous and does not allow a reliable classification.
J1312.6 − 1900	NVSS J131234 − 185902	198.1446	−18.9837	0.391	Table A2	bcu	UNCL	1	-
J1312.8 − 0425	PKS B1310 − 041	198.2121	−4.4139	0.824	Sowards-Emmerd+ (2004)	fsrq	FSRQ	0	-
J1312.8 − 2350	NVSS J131248 − 235046	198.2032	−23.8464	1.26	Table A2	bll	BLLAC	1	Landoni+ (2020)
J1314.7 + 2348	TXS 1312 + 240	198.6825	+23.8074	0.484	Table A2	bll	BLLAC	1	Paggi+ (2014)
J1315.0 − 4236	MS 13121 − 4221	198.7642	−42.6139	0.108	Stocke+ (1991)	bll	BLLAC	0	-
J1315.4 + 8453	6C B132240 + 850531	200.2216	+84.8364	0.573	Table A2	bcu	UNCL	1	-
J1315.5 + 1135	1RXS J131531.9 + 113327	198.8859	+11.5588	0.406	Table A2	bll	BLLAC	1	SDSS
J1315.9 − 0732	NVSS J131552 − 073301	198.9707	−7.5506	0.200	Table A2	bll	BLLAC	1	Desai+ (2019)
J1316.1 − 3338	PKS 1313 − 333	199.0333	−33.6498	1.21	Jauncey+ (1982)	fsrq	FSRQ	0	-
J1316.5 + 3013	RX J1316.9 + 3014	199.2274	+30.2484	0.586	Table A2	bcu	BLLAC	1	SDSS
J1317.1 + 6613	TXS 1316 + 665	199.4716	+66.2654	0.920	Table A2	bcu	UNCL	1	Steep radio spectrum, might it be a MIS?
J1317.6 + 3428	S4 1315 + 34	199.4021	+34.4211	1.05	Schmidt (1977)	fsrq	FSRQ	0	SDSS
J1317.6 + 7450	6C B131714.7 + 750402	199.5955	+74.8098	0.895	Table A2	bcu	UNCL	1	-
J1318.1 − 1740	AT20G J131808 − 173536	199.5339	−17.5935	0.622	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1318.2 + 6754	87GB 131701.6 + 681031	199.6679	+67.9067	0.976	Table A2	bcu	UNCL	1	-
J1318.7 − 1234	PMN J1318 − 1235	199.6786	−12.5844	1.18	Table A2	bcu	UNCL	1	-
J1319.5 + 1404	RX J1319.4 + 1405	199.8823	+14.0925	0.573	Schwope+ (2000)	bll	BLLAC	0	SDSS
J1319.5 − 0045	PKS B1317 − 005	199.9115	−0.8278	0.891	Bolton+ (1968)	bcu	MIS	0	SDSS. Steep radio spectrum. Classified as CSS by Dallacasa+ (1998)
J1319.8 + 7759	NVSS J131921 + 775823	199.8386	+77.9729	0.155	Table A2	bll	UNCL	1	-
J1321.1 + 2216	TXS 1318 + 225	200.2967	+22.2700	0.946	Sowards-Emmerd+ (2003)	fsrq	FSRQ	0	SDSS. Shaw+ (2012) reported FWHM(Hβ) $= 1700 \pm 300$ km/s, while Rakshit+ (2020) found FWHM(Hβ) $= 5377 \pm 843$ km/s, and Wu+Shen (2022) measured FWHM(Hβ) $= 3725 \pm 412$ km/s. The profile of Hβ and MgII is clearly distorted, with an apparent red wing, therefore the NLS1 classification should not apply. It seems to be a case similar to 4FGL J1443.9 + 2501 = PKS 1441 + 25.
J1321.3 − 2641	PKS 1318 − 263	200.3085	−26.6029	2.03	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J1321.9 + 3219	NVSS J132159 + 321903	200.5004	+32.3175	0.396	SDSS	bll	BLLAC	0	-
J1322.0 + 8317	S5 1322 + 83	200.4400	+83.2704	0.934	Table A2	fsrq	UNCL	1	Brizten+ (2007) reported a tentative $z = 1.024$ from a private communication by R. Vermeulen. However, no spectrum was ever published in the following years. This value has been taken for granted by other subsequent papers.
J1322.2 + 0842	NVSS J132210 + 084231	200.5424	+8.7091	0.326	SDSS	fsrq	CLAGN	0	Álvarez Crespo+ (2016) reported a featureless spectrum (observation done on 2014/02/05, while SDSS done on 2012/02/22)
J1322.3 − 0606	AT20G J132219 − 060619	200.5837	−6.1049	0.677	Table A2	bcu	UNCL	1	-
J1322.6 − 0936	PKS B1319 − 093	200.6538	−9.6272	1.86	Hook+ (2003)	fsrq	FSRQ	0	-
J1322.6 − 1418	TXS 1319 − 140	200.6274	−14.3151	0.659	Table A2	bcu	UNCL	1	-
J1322.6 − 1617	PMN J1322 − 1617	200.6819	−16.2902	0.525	Table A2	bcu	UNCL	1	-
J1322.9 + 0437	RBS 1257	200.7542	+4.6643	0.224	Schwope+ (2000)	bll	BLLAC	0	SDSS
J1323.0 + 2941	SDSS J132300.86 + 294144.8	200.7536	+29.6958	1.14	Gabány+ (2018)	bcu	FSRQ	0	SDSS. The 4FGL originally associated the gamma-ray source with 4C +29.48, which has a steep radio spectrum, and is likely a head-tail radio galaxy (MIS). However, a detailed analysis by Gabány+ (2018) showed that the most likely counterpart is the FSRQ SDSS J132300.86 + 294144.8, which is $\sim 27''$ from 4C +29.48.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1323.9 + 1405	RX J1323.9 + 1406	200.9932	+14.0999	0.293	Table A2	bll	BLLAC	1	SDSS
J1324.9 + 4748	TXS 1322 + 479	201.1223	+47.7224	2.26	Hook+ (1996)	fsrq	FSRQ	0	-
J1325.5 − 4300	Cen A	201.3651	−43.0191	0.00183	Lavaux+Hudson (2011)	RDG	MIS	0	FRI
J1325.6 − 0227	1RXS J132542.1 − 022800	201.4246	−2.4694	0.458	Table A2	bll	BLLAC	1	SDSS
J1326.1 + 1232	LEDA 1410672	201.5738	+12.4997	0.204	Cao+ (1999)	bll	BLLAC	0	SDSS
J1326.7 − 0503	TXS 1324 − 047	201.7276	−5.0164	1.88	Hook+ (2003)	fsrq	FSRQ	0	-
J1326.9 + 2210	B2 1324 + 22	201.7536	+22.1806	1.40	Hook+ (1996)	fsrq	FSRQ	0	SDSS
J1327.8 + 2522	NVSS J132758 + 252750	201.9956	+25.4629	1.01	Table A2	bll	BLLAC	1	SDSS
J1328.5 − 4727	2MASS J13284063 − 4727496	202.1693	−47.4637	0.236	Table A2	bll	BLLAC	1	Ricci+ (2015)
J1328.6 + 1145	2E 1326.1 + 1200	202.1398	+11.7557	0.338	Table A2	bll	BLLAC	1	SDSS. Schwope+ (2000) reported an uncertain $z = 0.49$.
J1329.4 − 0530	HE 1326 − 0516	202.3692	−5.5267	0.578	Goldschmidt+ (1992)	bcu	FSRQ	0	No spectrum is published in Goldschmidt's paper, but the redshift was later confirmed by Wisotski+ (2000) and 6dF
J1330.2 + 7002	NVSS J133025 + 700141	202.6075	+70.0274	0.343	Table A2	bll	BLLAC	1	Massaro+ (2015)
J1330.3 + 4441	1RXS J133021.4 + 444117	202.5897	+44.6890	0.438	Table A2	bll	BLLAC	1	SDSS
J1330.4 + 3157	MG2 J132953 + 3153	202.4703	+31.9031	0.731	Table A2	bll	BLLAC	1	Healey+ (2008). Dong+ (2018) reported $z = 3.7886$ from visual inspection of LAMOST DR2 & DR3 data, but there are no spectra available in the online database. SDSS gives $z = 3.789$ on the basis of a discontinuity at $\sim$ 5800 Å identified as Lyα, but the spectrum is very noisy, inconclusive.
J1330.7 + 5200	87GB 132842.6 + 521750	202.6775	+52.0376	0.688	Healey+ (2008)	bcu	AMB	0	Healey classified it as NLRG. Shaw+ (2012) confirmed the redshift and noted the Ca H&K break plus a strong [OII] emission line. No broad lines found, so they favor the Healey's classification. However, the radio spectrum is borderline ($\alpha \sim 0.5$) and no morphological studies were published.
J1331.0 + 3032	3C 286	202.7845	+30.5092	0.850	Lynds+ (1965)	css	MIS	0	SDSS. Radio morphology (CSS) An+ (2017). Optical spectrum NLS1 by Berton+ (2017).
J1331.0 + 5653	RX J1331.0 + 5655	202.7621	+56.9283	0.270	SDSS	bll	BLLAC	0	-
J1331.2 − 1325	PMN J1331 − 1326	202.8348	−13.4349	0.250	Álvarez Crespo+ (2016)	bll	FSRQ	0	The published spectrum showed [OIII]>Hβ, and a distorted Hβ profile similar to [OIII]. Check for SEY/NLS1 classification.
J1331.6 + 1711	TXS 1329 + 174	202.8894	+17.2141	0.631	Table A2	bll	BLLAC	1	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1331.7 − 0343	PKS 1328 − 034	202.8715	−3.6873	1.35	Wills+Lynds (1978)	fsrq	FSRQ	0	-
J1331.7 − 0647	NVSS J133146 − 064632	202.9453	−6.7759	0.180	Machalski+Condon (1999)	bcu	BLLAC	0	Machalski+Condon (1999) simply classified the radio source as AGN, without any other information. No spectrum published, no radio data except for NVSS. Shectman+ (1996) reported a slightly different $z = 0.126$, but perhaps is just the source at the center of the field. Peña-Herazo+ (2019) published a featureless spectrum, which implies a BLLAC classification.
J1332.0 − 0509	PKS 1329 − 049	203.0186	−5.1620	2.15	Thompson+ (1990)	fsrq	FSRQ	0	-
J1332.2 + 4722	B3 1330 + 476	203.1885	+47.3730	0.669	Landt+ (2001)	fsrq	FSRQ	0	SDSS. Landt+ (2001) also classified the source as SSRQ, but Specfind reported a flat radio spectrum ($\alpha \sim 0.1$–0.3).
J1332.6 − 1256	PMN J1332 − 1256	203.1635	−12.9376	1.49	Shaw+ (2012)	fsrq	FSRQ	0	-
J1333.2 + 2725	MG2 J133305 + 2725	203.2812	+27.4218	0.728	SDSS	fsrq	CLAGN	0	Hook+ (1996) and Sowards-Emmerd+ (2005) reported featureless spectra, while Healey+ (2008) classified it as FSRQ with $z = 2.126$ (no spectrum published), likely by identifying the line at ~ 4800 Å as CIV. It seems that SDSS spectrum, although noisy, displays more lines and seems to be more reliable for the redshift measurement. It remains the CLAGN classification due to the first two featureless spectra, although the weakness of the lines and the noisy continuum might point to a lack of sufficient S/N.
J1333.7 + 5056	CLASS J1333 + 5057	203.4741	+50.9600	1.37	Shaw+ (2009)	fsrq	FSRQ	0	SDSS
J1334.1 − 3521	PKS 1331 − 350	203.5501	−35.3372	-	-	bcu	UNCL	3	-
J1334.5 + 5634	TXS 1332 + 567	203.6562	+56.5300	0.343	Laurent-Muehleisen+ (1998)	fsrq	MIS	0	Laurent-Muehleisen+ (1998) also classified it as BLRG. Rafter+ (2011) classified it as FRI.
J1335.3 − 2949	1ES 1332 − 295	203.8740	−29.8441	0.513	Rector+ (2000)	bll	BLLAC	0	Stocke+ (1991) reported $z = 0.256$ and strong spectral changes between two epochs (from strong emission lines to a featureless continuum). The coordinates reported by Stocke are $\sim 10''$ from the position of 1ES 1332 − 295: perhaps, there was a pointing error.
J1336.2 + 2320	2MASS J13361219 + 2319581	204.0507	+23.3328	0.267	SDSS	bll	BLLAC	0	-
J1337.4 + 5502	S4 1335 + 55	204.4568	+55.0173	1.10	Stickel+Kühr (1994)	fsrq	FSRQ	0	SDSS
J1337.5 − 7802	RX J1338.2 − 7801	204.5446	−78.0174	-	-	bcu	UNCL	3	-
J1337.6 − 1257	PKS 1335 − 127	204.4158	−12.9569	0.539	Wilkes (1986)	fsrq	FSRQ	0	Wilkes' measurement based only on one line identified as MgII. Confirmed by Stickel+ (1993)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1337.9 − 1956	PMN J1337 − 1958	204.4472	−19.9699	0.482	Table A2	bcu	UNCL	1	-
J1338.0 + 6534	87GB 133543.8 + 654752	204.3169	+65.5462	0.945	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1338.9 + 1153	SDSS J133859.05 + 115316.7	204.7461	+11.8880	0.771	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1339.0 − 2400	PKS 1336 − 237	204.7573	−24.0206	0.657	Hook+ (2003)	bcu	FSRQ	0	Confirmed by Rajagopal+ (2021).
J1339.1 − 2620	PKS 1336 − 260	204.8329	−26.3418	1.51	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J1339.9 − 0138	PKS 1337 − 013	205.0192	−1.6296	1.62	Bolton+ (1970)	fsrq	FSRQ	0	2dF
J1340.1 + 3857	NVSS J133849 + 385111	204.7070	+38.8531	0.246	Smith+Spinrad (1980)	bcu	MIS	0	FRI, Laing+ (1983)
J1340.4 + 6926	TXS 1339 + 696	205.2000	+69.3896	2.26	Falco+ (1998)	bcu	FSRQ	0	-
J1340.5 + 4409	RX J1340.4 + 4410	205.1242	+44.1678	0.546	Beckmann+ (2003)	bll	BLLAC	0	SDSS
J1340.8 − 0409	NVSS J134042 − 041006	205.1751	−4.1686	0.223	Paiano+ (2017)	bll	BLLAC	0	-
J1341.1 + 7433	WN B1340.4 + 7450	205.3273	+74.5819	0.761	Table A2	bcu	UNCL	1	-
J1341.2 + 3958	SDSS J134105.10 + 395945.4	205.2713	+39.9959	0.171	Bade+ (1996)	bll	AMB	0	SDSS. It is classified BL Lac Object, but Specfind reported a steep radio spectrum ($\alpha \sim -0.6, -0.7$). No information about the radio morphology.
J1341.6 + 5515	SBS 1339 + 554	205.4008	+55.2436	0.207	Stepanian (2005)	bll	BLLAC	0	SDSS
J1341.7 − 3907	PMN J1341 − 3906	205.4749	−39.1166	0.243	Table A2	bcu	UNCL	1	-
J1341.8 − 2053	PKS B1339 − 206	205.5197	−20.8582	1.58	Hook+ (2003)	fsrq	FSRQ	0	-
J1342.6 + 0944	NVSS J134240 + 094752	205.6668	+9.7979	0.283	SDSS	fsrq	BLLAC	0	-
J1342.7 + 0505	4C +05.57	205.6818	+5.0756	0.136	Burbidge (1967)	bll	MIS	0	Burbidge reported no strong emission lines (only [OII] and Ca H&K break, no spectrum published). However, Grandi (1983) published a spectrum with broad and prominent emission lines ([OIII], Hβ, Hδ), and classified it as BLRG. The MIS classification (FRI-type) is confirmed by Gendre+Wall (2008) and the steep radio spectrum in Specfind ($\alpha \sim -0.6, -0.7$). Some doubts remain about the optical classification: Seyfert 1 by Grandi 1983, Lipovetsky+ (1988); Seyfert 2 by Thompson+ (1990); and it is also worth reminding the BL Lac-type spectrum reported by Burbidge. SDSS and LAMOST spectra suggest an intermediate Seyfert. There is the possibility of a rather odd CLAGN, with spectral changes determined both by the accretion and the partial covering.
J1343.6 + 5755	6C B134209.5 + 581020	205.9901	+57.9118	0.932	SDSS	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1344.0 + 6605	GC 1342 + 663	206.0362	+66.1032	1.35	Xu+ (1994)	fsrq	FSRQ	0	-
J1344.1 − 7700	PMN J1343 − 7658	205.9653	−76.9695	-	-	bcu	UNCL	3	-
J1344.2 − 1723	PMN J1344 − 1723	206.0600	−17.3946	2.51	Shaw+ (2012)	fsrq	FSRQ	0	-
J1344.4 − 3656	PKS 1341 − 366	206.0991	−36.9413	-	-	bcu	UNCL	3	-
J1345.5 + 4453	B3 1343 + 451	206.3882	+44.8832	2.54	Shaw+ (2012)	fsrq	FSRQ	0	SDSS
J1345.6 − 3356	NVSS J134543 − 335643	206.4294	−33.9454	-	-	bll	UNCL	3	-
J1345.8 + 0706	TXS 1343 + 073	206.4555	+7.1086	1.09	SDSS	fsrq	FSRQ	0	-
J1347.1 − 2959	NVSS J134706 − 295840	206.7787	−29.9785	-	-	bll	BLLAC	2	Ricci+ (2015)
J1347.4 + 7309	NVSS J134734 + 731812	206.8943	+73.3036	1.13	Table A2	bcu	UNCL	1	-
J1347.6 − 3751	PMN J1347 − 3750	206.9185	−37.8435	1.30	Shaw+ (2012)	fsrq	FSRQ	0	-
J1348.9 + 0756	1RXS J134853.8 + 075704	207.2225	+7.9466	0.250	SDSS	bll	BLLAC	0	-
J1349.5 − 1131	PKS 1346 − 112	207.3810	−11.5483	0.340	Hewitt+Burbidge (1993)	fsrq	FSRQ	0	-
J1350.8 + 3033	B2 1348 + 30B	207.7197	+30.5816	0.712	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS, apparent red-wing in the Hβ profile.
J1351.0 + 0029	PKS 1348 + 007	207.7685	+0.5221	2.08	Dunlop+ (1989)	fsrq	FSRQ	0	Radio structure unresolved according to Dunlop, but specfind gives a mildly steep radio spectrum ($\alpha \sim -0.5, -0.56$)
J1351.3 + 1115	RX J1351.3 + 1115	207.8369	+11.2481	0.456	Table A2	bll	BLLAC	1	Sandrinelli+ (2013)
J1351.4 − 1529	2MASX J13511746 − 1530155	207.8228	−15.5044	0.285	de Menezes+ (2020)	bll	BLLAC	0	-
J1351.7 + 5542	87GB 135011.8 + 555656	207.9925	+55.7030	1.16	Table A2	bll	BLLAC	1	SDSS
J1351.7 − 2912	PKS 1348 − 289	207.9452	−29.2049	1.03	Hook+ (2003)	bcu	BLLAC	0	Hook observed only one weak line, identified as MgII, in a noisy spectrum. Chu+ (1986) reported a featureless spectrum, likely due to an active jet. Specfind gives a mildly steep radio spectrum ($\alpha \sim -0.56$).
J1352.7 − 2742	PMN J1352 − 2745	208.1169	−27.7520	1.30	Table A2	bcu	UNCL	1	-
J1353.0 − 4413	PKS 1349 − 439	208.2356	−44.2112	-	-	bll	BLLAC	2	Featureless, Sbarufatti+ (2006). Many papers in the literature made a significant confusion with the nearby ($\sim 30''$) Seyfert 1 QSO 1349 − 439 at $z = 0.052$ (see Veron 1996).
J1353.2 + 3740	RGB J1353 + 376	208.3087	+37.6872	0.216	Brinkmann+ (2000)	bll	BLLAC	0	SDSS
J1353.3 + 1434	OP 186	208.3452	+14.5942	0.752	Table A2	bll	BLLAC	1	Shaw+ (2013)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1353.4 + 5600	RX J1353.4 + 5601	208.3669	+56.0158	0.404	SDSS	bll	BLLAC	0	The SDSS measurement is based on absorption features identified as G Band and Ca H+K. Bade+ (1998) measured $z = 0.370$ on the basis of the same absorption features. It seems that Bade was misled by the noise around the Ca H+K feature. There is also a LAMOST spectrum, but it is too noisy and inconclusive, although slightly in favor of SDSS measurement. It would be better to confirm the SDSS value with a high S/N spectrum.
J1353.7 − 3936	NVSS J135345 − 393711	208.4381	−39.6197	0.358	Table A2	bcu	BLLAC	1	Rajagopal+ (2021)
J1354.2 + 6934	87GB 135252.8 + 694626	208.5129	+69.5303	1.03	Table A2	bcu	UNCL	1	-
J1354.3 − 0206	PKS 1351 − 018	208.5287	−2.1009	3.72	Dunlop+ (1986)	fsrq	FSRQ	0	SDSS
J1354.4 + 3707	NVSS J135426 + 370654	208.6112	+37.1152	0.492	Table A2	bll	BLLAC	1	Peña-Herazo+ (2021)
J1354.7 + 0623	NVSS J135444 + 062249	208.6842	+6.3800	0.276	SDSS	bll	BLLAC	0	-
J1354.8 − 1041	PKS 1352 − 104	208.6938	−10.6841	0.332	Browne+ (1975)	fsrq	FSRQ	0	-
J1356.2 − 1726	PKS B1353 − 171	209.0290	−17.4088	0.0747	Jones+ (2009)	agn	MIS	0	Classified as FR0 by Glowaki+ (2017).
J1357.1 + 1921	4C +19.44	209.2685	+19.3187	0.720	Burbidge+Kinman (1966)	fsrq	FSRQ	0	SDSS
J1357.5 + 0127	RX J1357.6 + 0128	209.4112	+1.4705	0.219	Sowards-Emmerd+ (2005)	bll	BLLAC	0	Spectrum not published, but confirmed independently by Anderson+Filipovic (2009), although also the latter was not published.
J1358.1 + 7642	S5 1357 + 76	209.4807	+76.7225	1.58	Shaw+ (2012)	fsrq	FSRQ	0	Shaw flagged the value as uncertain, because the spectrum is quite noisy and there is only one evident line at $\sim$ 4000 Å, identified as CIV. Another weak feature at $\sim$ 7200 Å is identified as MgII. Hook+ (1996) reported a featureless spectrum, but this is due to a smaller wavelength range ($\sim$4800–9500 Å), which did not allow to detect the CIV, while MgII is too weak to emerge from the background noise.
J1358.9 − 0703	NVSS J135850 − 070403	209.7108	−7.0671	0.855	Table A2	bcu	UNCL	1	-
J1359.1 + 5544	87GB 135720.6 + 555936	209.7739	+55.7415	1.01	Fabrika+ (2011)	fsrq	FSRQ	0	SDSS
J1359.4 + 0202	PKS 1356 + 022	209.8631	+1.9985	1.33	Wills+Lynds (1978)	fsrq	FSRQ	0	SDSS
J1359.7 + 4012	87GB 135731.7 + 402612	209.9087	+40.1940	0.407	Landt+ (2001)	fsrq	FSRQ	0	-
J1359.8 − 3746	PMN J1359 − 3746	209.9572	−37.7669	0.334	Shaw+ (2013)	bll	BLLAC	0	Ricci+ (2015) reported a featureless spectrum, likely due to an increased jet activity
J1400.2 − 4010	2MASS J14002208 − 4008235	210.0920	−40.1399	0.203	de Menezes+ (2020)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1401.1 − 3717	NVSS J140113 − 371757	210.3084	−37.2996	-	-	bcu	UNCL	3	-
J1401.2 − 0915	PKS B1358 − 090	210.2722	−9.2754	0.667	Hook+ (2003)	fsrq	FSRQ	0	-
J1402.5 − 1827	PMN J1402 − 1825	210.6906	−18.4323	1.00	Table A2	bcu	UNCL	1	-
J1402.6 + 1600	4C +16.39	210.6855	+15.9991	0.245	Baldwin+ (1977)	bll	AMB	0	Baldwin recognized this BL Lac as very peculiar, having a significant extended radio emission. Further works (e.g., Hintzen+Owen 1981 and Saikia+ 1984) suggested it could be borderline between BL Lac and FRI classes (specfind gives $\alpha \sim -0.5$). SDSS spectrum displays strong and narrow emission lines, confirming a large viewing angle or, at least, a partial covering. Hβ emission line is almost absent in LAMOST spectra (1; 2), although these spectra a much more noisy.
J1402.6 − 3330	PMN J1402 − 3334	210.6725	−33.5692	2.14	Landt+ (2001)	fsrq	FSRQ	0	-
J1404.8 + 0402	MS 1402.3 + 0416	211.2121	+4.0339	0.920	Table A2	bll	BLLAC	1	Observed many times, but almost always showing a featureless spectrum. An early uncertain $z = 0.344$ was proposed by Perlman+ (1996), but neither the spectrum was published, nor any other indication of how it was measured. Falomo+Kotilainen (1999) wrote that this value is not in disagreement with the imaging of the host galaxy (unresolved). Bauer+ (2000) reported $z = 0.200$, but no indication of how it was measured. SDSS inconclusive, although there is an emission feature at ∼5700–5800 Å: if Bauer's value is correct ($z \sim 0.2$), then the feature might be the Hβ-[OIII] complex, and would be consistent with the identification of the break at $\sim$ 4700 Å with the absorption of the host galaxy (Ca H+K).
J1404.8 + 6554	NVSS J140450 + 655428	211.2065	+65.9088	0.363	Bade+ (1998)	bll	BLLAC	0	SDSS
J1406.1 − 2508	NVSS J140609 − 250808	211.5400	−25.1359	0.640	Table A2	bll	BLLAC	1	Ricci+ (2015)
J1406.4 − 1654	NVSS J140638 − 164954	211.6592	−16.8314	0.420	Table A2	bcu	UNCL	1	-
J1406.6 − 3934	1RXS J140630.3 − 393508	211.6254	−39.5858	-	-	bll	BLLAC	2	Piranomonte+ (2007)
J1406.9 + 1643	RBS 1350	211.7467	+16.7017	0.339	Table A2	bll	BLLAC	1	Piranomonte+ (2007)
J1407.5 − 2706	ESO 140425 − 2655.2	211.8149	−27.1582	0.0242	Smith+ (2000)	bll	BLLAC	0	6dF. This seems to be a rare case of BL Lac Object in a S0 host galaxy.
J1407.6 − 4301	SUMSS J140739 − 430231	211.9155	−43.0422	-	-	bll	BLLAC	2	Featureless. Klindt+ (2017) proposed a tentative $z = 0.124$ based on rather doubtful absorption features.
J1408.9 − 0751	PKS B1406 − 076	212.2353	−7.8741	1.49	Peterson+ (1979)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1410.1 + 0202	PKS 1407 + 022	212.5194	+2.0519	1.24	Table A2	bll	BLLAC	1	Featureless, Sbarufatti+ (2009). SDSS inconclusive (although, a triple emission feature at ∼8300–8500 Å might be the Hβ-[OIII] complex, which would imply $z \sim 0.71$).
J1410.3 + 1438	NVSS J141028 + 143841	212.6169	+14.6445	0.144	SDSS	bll	BLLAC	0	-
J1410.3 + 6058	RX J1410.5 + 6100	212.6285	+61.0036	0.383	Bade+ (1998)	bll	BLLAC	0	SDSS
J1410.4 + 2820	RX J1410.4 + 2821	212.6232	+28.3488	0.521	SDSS	bll	BLLAC	0	-
J1410.5 + 6215	TXS 1409 + 625	212.6476	+62.2798	0.582	Table A2	bcu	UNCL	1	-
J1411.5 − 0723	NVSS J141133 − 072252	212.8889	−7.3815	0.283	Table A2	bll	BLLAC	1	Paiano+ (2017)
J1411.8 + 5249	SBS 1410 + 530	212.9560	+52.8167	0.0760	Stepanian (2005)	bll	MIS	0	Steep radio spectrum, classified as FR0 by Miraghei+Best (2017). SDSS
J1412.0 + 3836	FIRST J141208.2 + 383521	213.0342	+38.5892	0.948	Table A2	bcu	BLLAC	1	SDSS
J1412.1 + 7427	GB6 J1411 + 7424	212.8944	+74.4083	0.542	Table A2	bll	BLLAC	1	Massaro+ (2015)
J1412.9 + 5018	SDSS J141302.28 + 501927.4	213.2595	+50.3242	1.53	SDSS	bcu	FSRQ	0	-
J1415.5 + 4830	RX J1415.5 + 4830	213.9033	+48.5085	0.496	SDSS	bll	BLLAC	0	Although the spectrum is rather noisy, the redshift is consistent with the estimate ($z \sim 0.5$) from the imaging of the host galaxy by Nilsson+ (2003)
J1415.9 − 1002	PKS B1412 − 096	213.8368	−9.9329	2.00	Hook+ (2003)	fsrq	FSRQ	0	-
J1416.1 + 1320	PKS B1413 + 135	213.9951	+13.3399	0.334	Table A2	bcu	AMB	1	It seems that the jetted AGN is behind a Seyfert 2 galaxy at $z = 0.247$ (SDSS). See detailed analyses in Stocke+ (1992), Perlman+ (2002), and Readhead+ (2021)
J1416.1 − 2417	NVSS J141612 − 241812	214.0507	−24.3038	0.136	Jones+ (2009)	bll	BLLAC	0	-
J1417.9 + 2543	1E 1415.6 + 2557	214.4861	+25.7240	0.236	Halpern+ (1986)	bll	BLLAC	0	Halpern also suggested that the host galaxy could be a spiral, but subsequent analyses favored the elliptical host (Romanishin 1992, Gladders+ 1997). SDSS image also shows a nearby $\sim 5''$ galaxy at the same z: an incoming merger?
J1417.9 + 4613	4C +46.29	214.2840	+46.1182	1.56	Walsh+ (1979)	fsrq	FSRQ	0	SDSS
J1418.4 + 3543	87GB 141615.9 + 355650	214.6191	+35.7137	0.819	Peña-Herazo+ (2021)	BCU	FSRQ	0	SDSS automatic measurement gives a wrong result ($z = 3.22$), because it identifies the apparent MgII emission line at $\sim$ 5100 Å as Lyα, which is obviously not the case.
J1418.4 − 0233	NVSS J141826 − 023336	214.6097	−2.5595	0.075	Table A2	bll	BLLAC	1	Paiano+ (2020)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1418.7 − 3504	PKS 1415 − 349	214.7455	−35.1618	1.54	Hook+ (2003)	fsrq	FSRQ	0	-
J1418.9 + 7731	1RXS J141901.8 + 773229	214.7515	+77.5415	0.014	Masetti+ (2013)	bll	BLLAC	0	-
J1419.3 + 0444	2MASS J14192748 + 0445138	214.8645	+4.7538	0.809	Table A2	bll	AMB	1	Classified as Broad-Absorption Line (BAL) QSO at $z \sim 1.793$ by Trump+ (2006) on the basis of SDSS-DR3. Latest SDSS spectrum is noisy and inconclusive. Radio detections only at 1.4 GHz.
J1419.4 − 0838	NVSS J141922 − 083830	214.8440	−8.6423	0.903	Buckley+ (2015)	fsrq	FSRQ	0	-
J1419.5 + 3821	B3 1417 + 385	214.9442	+38.3635	1.83	Lahulla+ (1991)	fsrq	FSRQ	0	SDSS
J1419.8 + 5423	OQ 530	214.9442	+54.3874	0.152	Stickel+ (1993)	bll	BLLAC	0	SDSS. Host galaxy classified as S0 by Wurtz+ (1996). Another rare case of BL Lac Object in a S0 host galaxy.
J1420.3 + 0612	SDSS J142013.69 + 061428.6	215.0570	+6.2413	0.625	SDSS	bll	BLLAC	0	-
J1420.9 − 7920	PMN J1421 − 7920	215.3499	−79.3407	-	-	bcu	UNCL	3	-
J1421.1 + 3859	TXS 1419 + 391	215.2751	+38.9230	0.489	White+ (2000)	fsrq	FSRQ	0	SDSS. The source was classified as NLS1 by Rakshit+ (2017) on the basis of the SDSS spectrum, which in turn displays an apparent artifact affecting half of the Hβ profile. Rakshit himself changed into FSRQ the classification of the source in 2020 (Rakshit+ 2020). White's paper shows a complete spectrum, where the broad profile of Hβ is evident.
J1421.1 − 1120	PMN J1420 − 1118	215.2506	−11.3057	1.17	Table A2	bcu	UNCL	1	-
J1421.1 − 4614	SUMSS J142047 − 461431	215.1977	−46.2415	-	-	bcu	UNCL	3	-
J1421.6 − 4819	PMN J1421 − 4820	215.4110	−48.3397	1.85	Titov+ (2017)	bcu	FSRQ	0	-
J1422.3 + 3223	OQ 334	215.6266	+32.3862	0.682	Wills+Wills (1974)	fsrq	CLAGN	0	SDSS. Classified as CLAGN by Mishra+ (2021)
J1422.6 + 5801	1ES 1421 + 582	215.6620	+58.0321	0.636	Bade+ (1998)	bll	BLLAC	0	SDSS
J1423.1 + 3738	NVSS J142304 + 373729	215.7692	+37.6252	0.454	Table A2	bll	BLLAC	1	SDSS
J1423.5 + 4524	87GB 142138.0 + 453705	215.8697	+45.3955	0.749	Table A2	bcu	BLLAC	1	SDSS
J1423.5 − 7829	PKS 1418 − 782	215.9315	−78.4930	0.788	Shaw+ (2012)	fsrq	FSRQ	0	-
J1424.1 + 2917	NVSS J142408 + 291800	216.0347	+29.3001	0.368	Table A2	bcu	BLLAC	1	LAMOST
J1424.1 − 1750	NVSS J142412 − 175010	216.0515	−17.8357	0.0823	Jones+ (2009)	bll	BLLAC	0	6dF
J1424.2 + 0433	TXS 1421 + 048	216.0396	+4.5811	0.452	Table A2	bll	BLLAC	1	Chavushyan+ (2001).
J1424.6 + 1447	SDSS J142436.29 + 144910.5	216.1512	+14.8196	0.557	Table A2	bll	BLLAC	1	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1425.0 + 3615	FBQS J142455.5 + 361536	216.2313	+36.2600	0.47	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1425.4 − 0119	2QZ J142526.2 − 011826	216.3590	−1.3072	0.511	Table A2	bll	BLLAC	1	SDSS. Londish+ (2002) reported $z = 0.041$, but this value was never confirmed by Croom+ (2004) and Londish+ (2007)
J1426.1 + 3403	RGB J1426 + 340	216.5322	+34.0740	0.488	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1426.4 + 3625	B2 1424 + 36	216.6545	+36.4193	1.09	Henstock+ (1997)	fsrq	FSRQ	0	SDSS
J1427.0 + 2348	PKS 1424 + 240	216.7516	+23.8000	0.605	Paiano+ (2017)	BLL	BLLAC	0	-
J1427.4 − 1823	NVSS J142726 − 182303	216.8580	−18.3845	0.678	Table A2	bcu	UNCL	1	-
J1427.6 − 3305	PKS 1424 − 328	216.9223	−33.0921	0.404	Table A2	bll	BLLAC	1	Titov+ (2013)
J1427.7 − 3215	NVSS J142750 − 321515	216.9592	−32.2547	0.208	Table A2	bll	UNCL	1	-
J1427.9 − 4206	PKS 1424 − 41	216.9846	−42.1054	1.52	White+ (1988)	FSRQ	FSRQ	0	-
J1428.1 + 1629	MG1 J142813 + 1629	217.0474	+16.4811	0.560	Smith+ (2018)	bcu	FSRQ	0	Spectra (ESO NTT + P60)
J1428.3 + 5635	87GB 142651.1 + 564919	217.1031	+56.6031	2.13	SDSS	fsrq	FSRQ	0	-
J1428.5 + 4240	H 1426 + 428	217.1359	+42.6725	0.129	Remillard+ (1989)	bll	BLLAC	0	SDSS
J1428.7 − 1017	1RXS J142844.4 − 101801	217.1850	−10.3003	1.233	Table A2	bcu	UNCL	1	-
J1428.8 + 7429	RX J1428.4 + 7429	217.1247	+74.5006	0.245	Table A2	bcu	UNCL	1	-
J1428.9 + 5406	S4 1427 + 543	217.3412	+54.1031	3.01	Henstock+ (1997)	fsrq	FSRQ	0	SDSS
J1429.8 − 3058	NVSS J142940 − 310013	217.4160	−31.0036	0.265	Table A2	bcu	UNCL	1	-
J1431.1 − 3120	PKS 1428 − 311	217.7884	−31.3441	0.150	Table A2	bll	UNCL	1	-
J1432.8 + 7648	GALEXASC J143211.35 + 764355.6	218.0484	+76.7322	0.839	Table A2	bcu	UNCL	1	-
J1433.0 − 1801	PKS 1430 − 178	218.2404	−18.0265	2.33	Wright+ (1979)	fsrq	FSRQ	0	-
J1433.7 − 7304	1RXS J143343.2 − 730433	218.4282	−73.0772	0.200	Desai+ (2019)	bcu	BLLAC	0	-
J1434.2 + 4204	B3 1432 + 422	218.5237	+42.0544	1.24	Vermeulen+ (1996)	fsrq	FSRQ	0	SDSS
J1434.7 + 1950	OQ 253	218.6658	+19.8669	1.38	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	LAMOST
J1434.8 + 6640	1RXS J143442 + 664031	218.6727	+66.6740	0.574	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J1435.5 + 2021	TXS 1433 + 205	218.8414	+20.3550	0.748	Shaw+ (2013)	bll	MIS	0	SDSS clearly shows only strong and narrow emission lines—confirmed by the FWHM measured by Rakshit+ (2020)—suggesting the view at large angles, hypothesis strengthened by a steep radio spectrum ($\alpha \sim -0.62, -0.75$).

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1435.9 − 8348	PMN J1433 − 8340	218.3685	−83.6858	-	-	bcu	UNCL	3	-
J1436.9 + 2321	PKS B1434 + 235	219.1708	+23.3509	1.55	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1436.9 + 5638	RBS 1409	219.2405	+56.6569	0.15	Schwope+ (2000)	bll	BLLAC	0	-
J1438.0 − 3128	PKS 1435 − 311	219.5449	−31.3746	1.29	Jauncey+ (1982)	fsrq	FSRQ	0	-
J1438.5 − 4207	SUMSS J143836 − 420705	219.6531	−42.1186	-	-	bcu	UNCL	3	-
J1438.6 + 1205	RX J1438.3 + 1204	219.6065	+12.0719	0.848	SDSS	bll	BLLAC	0	-
J1438.9 + 3710	B2 1436 + 37B	219.7234	+37.1765	2.40	Healey+ (2008)	fsrq	FSRQ	0	SDSS
J1439.3 + 3932	PG 1437 + 398	219.8228	+39.5452	0.344	Piranomonte+ (2007)	bll	BLLAC	0	SDSS
J1439.5 − 2525	NVSS J143934 − 252458	219.8944	−25.4164	0.160	Desai+ (2019)	bcu	BLLAC	0	-
J1439.7 + 4958	GB6 J1439 + 4958	219.9457	+49.9682	0.174	Falco+ (1998)	bll	BLLAC	0	-
J1439.9 − 3953	1RXS J143949.8 − 395524	219.9619	−39.9218	0.300	Marchesini+ (2019)	bll	BLLAC	0	-
J1440.0 − 1530	PKS 1437 − 153	219.9870	−15.5307	0.702	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1440.0 − 2343	PMN J1439 − 2341	219.9977	−23.6947	0.309	Paiano+ (2021)	bll	BLLAC	0	-
J1440.6 − 3846	1RXS J144037.4 − 384658	220.1576	−38.7820	0.141	Table A2	bll	BLLAC	1	6dF
J1440.9 + 0609	PMN J1440 + 0610	220.2206	+6.1712	0.396	Sandrinelli+ (2013)	bll	BLLAC	0	-
J1441.6 − 1522	PMN J1441 − 1523	220.4392	−15.3934	2.64	Shaw+ (2012)	fsrq	FSRQ	0	-
J1441.7 + 1836	NVSS J144143 + 183706	220.4313	+18.6196	0.624	Table A2	bcu	BLLAC	1	SDSS
J1442.0 + 4348	SDSS J144207.15 + 434836.6	220.5298	+43.8102	0.550	Table A2	bll	BLLAC	1	SDSS
J1442.2 + 0622	SDSS J144212.23 + 062526.1	220.5510	+6.4239	0.698	Pursimo+ (2013)	bcu	FSRQ	0	-
J1442.6 − 4623	SUMSS J144236 − 462302	220.6517	−46.3838	0.103	Jones+ (2009)	bll	BLLAC	0	-
J1442.7 + 1200	1ES 1440 + 122	220.7012	+12.0112	0.163	Schachter+ (1993)	bll	BLLAC	0	SDSS. The AGN has two close companions: one is a foreground star, the other is another galaxy at the same redshift, likely interacting. See Sbarufatti+ (2006) and references therein.
J1443.1 + 4728	B3 1441 + 476	220.8273	+47.4324	0.703	Yuan+ (2008)	nlsy1	NLS1	0	SDSS. Early classifications indicated a steep radio spectrum, but recent observations measured a flat spectrum, suggesting that the steepness was due to non-simultaneous observations. See Berton+ (2018) and references therein.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1443.1 + 5201	3C 303	220.7615	+52.0270	0.141	Spinrad (1976)	rdg	MIS	0	SDSS. Classified as FRII by Laing+ (1983). Optical spectrum: Seyfert intermediate
J1443.6 + 2515	NVSS J144334 + 251559	220.8933	+25.2662	0.529	SDSS	bll	BLLAC	0	-
J1443.9 + 2501	PKS 1441 + 25	220.9871	+25.0290	0.940	Shaw+ (2012)	fsrq	FSRQ	0	Shaw reported FWHM(Hβ) = 1600 ± 400 km/s, but the published spectrum is quite noisy in the red part, where Hβ should be. The SDSS spectrum is a bit better and clearly shows the Hβ-[OIII] complex. The Hβ profile is distorted, with an apparent red wing. The analysis by Rakshit+ (2020) resulted in a slightly greater FWHM (1962 ± 433 km/s), but still in the NLS1 range. This source was detected MAGIC at VHE in 2015 Ahnen+ (2015), and, therefore, it might be the first NLS1 detected at VHE. However, the reanalysis of SDSS spectrum by one of us (S.C.) rejected the NLS1 classification and confirmed that as FSRQ.
J1443.9 − 3908	PKS 1440 − 389	220.9883	−39.1445	0.139	Goldoni+ (2021)	bll	BLLAC	0	-
J1445.0 − 0326	RBS 1424	221.2760	−3.4369	0.119	Table A2	bll	BLLAC	1	Paiano+ (2020)
J1445.9 − 1626	PKS B1443 − 162	221.4724	−16.4838	0.989	Table A2	bll	BLLAC	1	Titov+ (2011)
J1446.0 − 3039	PMN J1445 − 3036	221.4834	−30.6182	-	-	bcu	UNCL	3	-
J1446.3 + 3111	MG2 J144640 + 3110	221.6515	+31.1795	0.079	Table A2	bcu	BLLAC	1	Truebenbach+Darling (2017)
J1446.7 + 1719	S3 1444 + 17	221.6473	+17.3521	1.02	Healey+ (2008)	fsrq	FSRQ	0	SDSS. Sowards-Emmerd+ (2005) reported $z = 0.102$: perhaps a typo?
J1446.8 − 1830	NVSS J144644 − 182922	221.6868	−18.4903	0.814	Table A2	bcu	UNCL	1	-
J1447.0 − 2657	NVSS J144657 − 265713	221.7369	−26.9495	0.331	Paiano+ (2021)	bcu	BLLAC	0	-
J1448.0 + 3608	RBS 1432	222.0024	+36.1420	0.449	Table A2	bll	BLLAC	1	Paiano+ (2020)
J1449.5 + 2746	B2 1447 + 27	222.3664	+27.7806	0.0307	Huchra+ (1990)	rdg	MIS	0	Classified as FRI by Angioni (2020), S0 host galaxy.
J1449.6 − 2137	PKS B1446 − 214	222.4166	−21.6569	0.938	Healey+ (2008)	fsrq	FSRQ	0	-
J1449.7 − 0910	1RXS J144942.2 − 091018	222.4245	−9.1669	0.159	Table A2	agn	UNCL	1	-
J1450.4 + 0910	TXS 1448 + 093	222.6299	+9.1744	2.63	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1450.8 + 5201	SDSS J145059.99 + 520111.7	222.7499	+52.0199	2.47	Shaw+ (2013)	bll	BLLAC	0	SDSS. The redshift was measured on the basis of the Lyα forest, although Paiano+ (2017) suggest it is only a lower limit. This seems to be the farthest BL Lac Object.
J1451.4 + 6355	RX J1451.4 + 6354	222.8655	+63.9054	0.650	Bade+ (1998)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1451.5 + 1415	NVSS J145126 + 141626	222.8624	+14.2741	0.529	SDSS	bcu	MIS	0	There are no publications on either the radio morphology or the spectrum (just the NVSS detection), but the optical spectrum is typical of Type 2 AGN.
J1451.8 − 3851	PKS 1448 − 386	223.0219	−38.8555	0.204	Table A2	bcu	UNCL	1	-
J1453.0 − 1318	TXS 1450 − 131	223.2423	−13.3230	-	-	bcu	UNCL	3	-
J1453.5 + 3505	MG2 J145315 + 3506	223.3273	+35.0943	0.715	Healey+ (2008)	fsrq	BLLAC	0	Hook+ (1998) reported a featureless spectrum with Lick 3 m telescope in 1995. It is worth noting that the SDSS spectrum (taken in 2011) displays weak emission lines, and Rakshit+ (2020) measured EW just a little bit above the 5 Å threshold. Rakshit also measured FWHM(Hβ) = 1764 ± 391 km/s, suggesting a NLS1 classification, but the weakness of the lines suggests that the narrowness might be due to the jet activity (cf Foschini 2012). Further observations are required.
J1454.0 + 4927	87GB 145232.0 + 493854	223.5536	+49.4445	2.11	SDSS	bcu	FSRQ	0	-
J1454.1 + 1622	CLASS J1454 + 1623	223.5869	+16.4068	1.27	SDSS	fsrq	FSRQ	0	-
J1454.1 + 2647	B2 1451 + 26	223.4733	+26.8093	0.757	Table A2	bcu	BLLAC	1	SDSS
J1454.4 + 5124	TXS 1452 + 516	223.6130	+51.4094	1.08	Stepanian (2005)	bll	BLLAC	0	Paiano+ (2020) reported a featureless spectrum, likely due to the increased jet activity.
J1454.4 − 3744	PKS 1451 − 375	223.6142	−37.7925	0.314	Browne+ (1975)	fsrq	FSRQ	0	-
J1455.0 + 0247	87GB 145233.9 + 030210	223.7810	+2.8445	0.522	Table A2	bll	BLLAC	1	Sandrinelli+ (2013)
J1455.4 − 3654	PKS 1452 − 367	223.7901	−36.9187	0.095	Hook+ (2003)	bcu	MIS	0	Steep radio spectrum, likely a FRI (cf Jones+McAdam 1992).
J1455.8 − 7601	SUMSS J145543 − 760054	223.9320	−76.0145	-	-	bcu	BLLAC	2	Rajagopal+ (2021)
J1456.0 + 5051	RGB J1456 + 508	224.0338	+50.8101	0.480	Bade+ (1998)	bll	BLLAC	0	-
J1457.3 − 4246	PKS 1453 − 426	224.3042	−42.8102	0.358	Table A2	bcu	UNCL	1	Typo in the 4FGL name: it is written PKS J1453 − 426, but the coordinates are clearly referred to B1950, not J2000.
J1457.4 − 3539	PKS 1454 − 354	224.3613	−35.6528	1.42	Hook+ (2003)	FSRQ	FSRQ	0	-
J1457.8 − 4642	PMN J1457 − 4642	224.4243	−46.7028	0.112	Goldoni+ (2021)	bcu	BLLAC	0	-
J1458.6 + 3722	B3 1456 + 375	224.6866	+37.3393	0.333	Vermeulen+ (1996)	bll	BLLAC	0	SDSS
J1459.0 + 6129	SDSS J145852.69 + 612813.8	224.7196	+61.4705	0.672	Table A2	bcu	UNCL	1	Steep radio spectrum ($\alpha \sim -0.6$): MIS?
J1459.0 + 7140	3C 309.1	224.7816	+71.6722	0.905	Burbidge+Kinman (1966)	css	MIS	0	Classified as CSS by van Breugel+ (1984) with a viewing angle $\sim 14^\circ$ Wilkinson+ (1986)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1459.5 + 1527	MG1 J145921 + 1526	224.8423	+15.4485	0.370	SDSS	fsrq	BLLAC	0	-
J1500.7 + 4752	TXS 1459 + 480	225.2027	+47.8543	1.06	Britzen+ (2008)	bll	BLLAC	0	-
J1500.9 + 5528	FIRST J150106.2 + 552750	225.2761	+55.4641	0.503	Table A2	bll	BLLAC	1	SDSS
J1501.0 + 2238	MS 1458.8 + 2249	225.2576	+22.6351	0.235	Stocke+ (1991)	bll	BLLAC	0	-
J1502.5 + 5552	FIRST J150229.0 + 555204	225.6211	+55.8680	-	-	bcu	UNCL	3	-
J1503.3 + 1651	NVSS J150316 + 165116	225.8194	+16.8546	0.674	Table A2	bll	UNCL	1	-
J1503.5 + 4759	TXS 1501 + 481	225.8533	+47.9750	0.344	SDSS	bll	MIS	0	Steep radio spectrum, core dominance 0.86 (Brotherton+ 2015), type 2 optical spectrum.
J1503.7 − 1540	RBS 1457	225.9194	−15.6873	-	-	bll	BLLAC	2	Paiano+ (2020)
J1503.9 − 4247	PMN J1504 − 4248	226.0266	−42.8058	-	-	bcu	UNCL	3	-
J1504.4 + 1029	PKS 1502 + 106	226.1041	+10.4942	1.84	Smith+ (1977)	FSRQ	FSRQ	0	Previous reports by Burbidge+Strittmatter (1972) suggested $z = 0.572$. SDSS
J1505.0 + 0326	PKS 1502 + 036	226.2770	+3.4419	0.408	Wills+Lynds (1978)	NLSY1	NLS1	-	Classified as NLS1 by Zhou+ (2006). SDSS
J1505.0 − 3433	PMN J1505 − 3432	226.2599	−34.5491	0.359	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1505.5 − 8241	WISEA J150525.41 − 824231.1	226.3561	−82.7086	0.329	Table A2	bcu	UNCL	1	-
J1506.1 + 3731	B2 1504 + 37	226.5397	+37.5142	0.673	Stickel+Kühr (1994)	fsrq	FSRQ	-	SDSS, Type 2 optical spectrum, but flat radio spectrum. Likely jet-cloud interaction Wiklind+Combes (1996), Carilli+ (1997), Kanekar+Chengalur (2008)
J1506.4 + 4331	NVSS J150617 + 433413	226.5735	+43.5704	0.470	SDSS	bll	BLLAC	0	-
J1506.4 − 0540	NVSS J150637 − 054006	226.6542	−5.6681	0.518	Piranomonte+ (2007)	bll	BLLAC	0	-
J1506.6 + 0813	PMN J1506 + 0814	226.6853	+8.2335	0.592	Table A2	bll	BLLAC	1	SDSS
J1507.2 + 1721	NVSS J150716 + 172103	226.8184	+17.3508	0.565	SDSS	bll	BLLAC	0	-
J1507.3 − 3710	NVSS J150720 − 370903	226.8367	−37.1508	0.206	Table A2	bcu	UNCL	1	-
J1508.4 + 7717	NVSS J150811 + 771819	227.0452	+77.3046	0.248	Table A2	bcu	UNCL	1	-
J1508.8 + 2708	RBS 1467	227.1776	+27.1521	0.270	Beckmann+ (2003)	bll	BLLAC	0	SDSS. Spiral galaxy of unknown redshift at $\sim 6.7''$
J1509.6 − 4334	PMN J1509 − 4340	227.3989	−43.6755	0.776	Landt+ (2001)	fsrq	FSRQ	0	-
J1509.7 + 5556	SBS 1508 + 561	227.4498	+55.9381	0.578	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1509.8 − 2906	AT20G J150945 − 290502	227.4377	−29.0836	-	-	bcu	UNCL	3	-
J1510.1 + 5702	GB 1508 + 5714	227.5122	+57.0454	4.31	Hook+ (1995)	fsrq	FSRQ	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1510.8 + 7959	1RXS J151026.3 + 795946	227.6364	+80.0015	0.868	Table A2	bcu	UNCL	1	-
J1510.8 − 0542	PKS 1508 − 05	227.7233	−5.7187	1.19	Peterson+Bolton (1972)	fsrq	FSRQ	0	-
J1511.8 − 0513	NVSS J151148 − 051345	227.9523	−5.2297	0.907	Table A2	bll	BLLAC	1	Goldoni+ (2021)
J1512.1 − 2255	1RXS J151213.1 − 225515	228.0531	−22.9190	0.315	Böhringer+ (2004)	bll	BLLAC	0	Marchesini+ (2016) reported a featureless spectrum, likely due to an increased jet activity.
J1512.2 + 0202	PKS 1509 + 022	228.0656	+2.0547	0.220	Savage+ (1976)	fsrq	MIS	0	SDSS, type 2 optical spectrum. Steep radio spectrum ($\alpha \sim -0.6$).
J1512.2 + 4704	B3 1510 + 472	228.0594	+47.0592	1.14	Garnett+ (2017)	bcu	BLLAC	0	SDSS quite noisy, but there is a clear emission feature at $\sim$ 5900 Å consistent with the identification as MgII.
J1512.8 − 0906	PKS 1510 − 089	228.2106	−9.1000	0.360	Burbidge+Kinman (1966)	FSRQ	FSRQ	0	Optical spectrum Torrealba+ (2012)
J1513.2 − 7131	PMN J1512 − 7131	228.2185	−71.5315	-	-	bcu	UNCL	3	-
J1513.4 − 0753	NVSS J151324 − 075450	228.3508	−7.9143	0.149	Table A2	bll	BLLAC	1	6dF: the main feature at $\sim$ 4500 Å might be MgII: then $z \sim 0.61$
J1513.4 − 3231	PKS 1510 − 324	228.4124	−32.5832	1.15	Ackermann+ (2011)	fsrq	FSRQ	0	Optical follow-up program of the *Fermi* LAT collaboration, but no more info available and no paper was published.
J1513.4 − 3721	2MASS J15131867 − 3720114	228.3278	−37.3365	-	-	bcu	UNCL	3	-
J1514.4 − 7719	1RXS J151448.8 − 772249	228.7033	−77.3803	-	-	bcu	BLLAC	2	6dF: one absorption feature at $\sim$ 4300 Å might be Ca H+K break: then $z \sim 0.075$
J1514.6 − 2044	PMN J1514 − 2043	228.6397	−20.7406	0.348	Table A2	bcu	UNCL	1	-
J1514.7 − 3617	PMN J1514 − 3617	228.6703	−36.2847	-	-	bcu	UNCL	3	-
J1514.8 − 0949	PMN J1514 − 0948	228.7073	−9.8107	1.12	Table A2	bcu	BLLAC	1	Rajagopal+ (2021)
J1516.5 + 0015	PKS 1514 + 00	229.1676	+0.2505	0.053	Searle+Bolton (1968)	rdg	MIS	0	SDSS. Classified as FRII by Fanaroff+ (2021)
J1516.8 + 2918	RGB J1516 + 293	229.1733	+29.3026	0.130	Laurent-Muehleisen+ (1998)	bll	BLLAC	0	SDSS
J1516.8 + 3651	MG2 J151646 + 3650	229.2052	+36.8397	0.814	Table A2	bll	BLLAC	1	SDSS
J1516.9 + 1934	PKS 1514 + 197	229.2367	+19.5369	1.07	Persic+Salucci (1986)	bll	BLLAC	0	SDSS spectrum is noisy, but it confirms the broad emission feature at $\sim$ 5900 Å, which is consistent with MgII. Many other featureless observations are reported in the literature, likely due to a higher activity of the jet (Shaw+ 2013 observation was made on the source with optical flux greater than Persic+Salucci's by a factor $\sim$ 4); Sowards-Emmerd+ (2005) reported $z = 0.65$ from archives, but no further information is available (it was likely from Snellen+ 2002, which was a photometric z).

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1517.0 + 2639	SDSS J151702.59 + 263858.7	229.2608	+26.6497	0.549	Table A2	bcu	UNCL	1	-
J1517.3 + 6630	87GB 151628.7 + 663843	229.2698	+66.4582	0.819	Table A2	bcu	UNCL	1	-
J1517.7 + 6525	1H 1515 + 660	229.4483	+65.4231	0.738	Table A2	bll	BLLAC	1	Beckmann+ (1999) reported $z > 0.702$ on the basis of some absorption features; although it is a lower limit, it was often taken as a firm value in the literature. None of the more recent observations confirmed it, last one Shaw+ (2013). Scarpa+ (1999) reported arc-like features surrounding the point source in the HST images, suggesting gravitational lensing, which was later excluded by O'Dowd+ (2005). These features seem to be the residual of a merger.
J1517.7 − 2422	AP Librae	229.4242	−24.3721 -	0.0490	Disney+ (1974)	bll	BLLAC	0	6dF
J1518.0 − 2731	TXS 1515 − 273	229.5150	−27.5253	0.128	Becerra González+ (2021)	bll	BLLAC	0	-
J1518.4 + 0750	NVSS J151826 + 075219	229.6111	+7.8729	0.642	Table A2	bcu	BLLAC	1	SDSS
J1518.6 + 0614	TXS 1516 + 064	229.6905	+6.2323	0.102	Owen+ (1995)	rdg	MIS	0	SDSS. Classified as Narrow-Angle Tail FRI by O'Dea+ (1987) and Miraghei+Best (2017)
J1518.6 + 4044	GB6 J1518 + 4045	229.6621	+40.7501	0.065	Laurent-Muehleisen+ (1998)	bll	AMB	0	SDSS. Laurent-Muehleisen classified it as Seyfert 1, measuring FWHM(Hα)$\sim$ 1900 km/s. However, Hβ is almost absent, and there are strong oxygen narrow lines, suggesting some obscuration and, hence, a large viewing angle. It seems a Seyfert 1.9, Singha+ (2021) classified it as LERG with outflows, but the radio spectrum is flat.
J1520.0 − 0905	1RXS J151959.7 − 090434	229.9962	−9.0739	0.902	Table A2	bcu	UNCL	1	-
J1520.4 + 5546	SDSS J152034.98 + 554256.9	230.1457	+55.7158	0.480	Table A2	bll	BLLAC	1	SDSS: there is a feature at $\sim$ 4300 Å: if MgII, then $z \sim 0.54$
J1520.5 + 4209	B3 1518 + 423	230.1655	+42.1865	0.485	Shaw+ (2012)	fsrq	AMB	0	SDSS. Classified NLS1 by Rakshit+ (2017) with FWHM(Hβ)= 2026 $\pm$ 105 km/s, but Rakshit+ (2020) reported FWHM(Hβ)= 2733 $\pm$ 203 km/s. SDSS image shows a distorted point source: contaminating source? on-going merging?
J1520.8 − 0348	NVSS J152048 − 034850	230.2038	−3.8144	1.00	Table A2	bll	BLLAC	1	Goldoni+ (2021)
J1521.1 + 0421	PKS B1518 + 045	230.3439	+4.3417	0.052	Drinkwater+ (1997)	rdg	MIS	0	SDSS. Classified FRI by Miraghei+Best (2017)
J1521.8 + 4338	B3 1520 + 437	230.4567	+43.6109	2.17	Hook+ (1996)	fsrq	FSRQ	0	SDSS
J1522.1 + 3144	B2 1520 + 31	230.5416	+31.7373	1.49	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1522.6 − 2730	PKS 1519 − 273	230.6570	−27.5030	1.29	Heidt+ (2004)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1523.2 − 3941	PMN J1523 − 3936	230.8886	−39.6115	0.799	Table A2	bcu	UNCL	1	-
J1526.1 − 0831	GALEXASC J152603.17 − 083146.0	231.5133	−8.5296	0.587	Table A2	bll	BLLAC	1	Paiano+ (2019)
J1526.7 − 1529	2MASX J15264667 − 1530269	231.6945	−15.5074	0.214	Table A2	bcu	BLLAC	1	6dF
J1527.3 + 3117	B2 1525 + 31	231.8281	+31.2568	1.39	Barbieri+ (1975)	fsrq	FSRQ	0	SDSS
J1528.2 − 2905	PMN J1528 − 2858	232.0606	−28.9810	0.833	Table A2	bcu	UNCL	1	-
J1529.2 + 3812	NVSS J152913 + 381217	232.3065	+38.2049	0.831	Table A2	bll	BLLAC	1	SDSS
J1529.7 + 6733	WN B1529 + 6741	232.4299	+67.5298	1.05	Table A2	bcu	UNCL	1	-
J1530.5 − 3026	NVSS J153041 − 302559	232.6714	−30.4329	-	-	bcu	UNCL	3	-
J1530.9 + 5736	WN B1529 + 5746	232.7425	+57.6070	0.723	Table A2	bll	BLLAC	1	SDSS
J1531.7 + 4710	SDSS J153139.78 + 470705.9	232.9158	+47.1181	1.04	Table A2	bll	BLLAC	1	SDSS
J1532.0 + 3016	RX J1531.9 + 3016	233.0093	+30.2747	0.0650	Laurent-Muehleisen+ (1998)	bll	BLLAC	0	SDSS
J1532.7 − 1319	TXS 1530 − 131	233.1891	−13.3195	0.707	Table A2	bcu	UNCL	1	-
J1533.2 + 1855	RX J1533.1 + 1854	233.2969	+18.9081	0.307	Piranomonte+ (2007)	bll	BLLAC	0	SDSS
J1533.2 + 3416	RX J1533.3 + 3416	233.3511	+34.2779	0.981	Table A2	bll	BLLAC	1	SDSS
J1534.8 + 0131	PKS 1532 + 01	233.7186	+1.5178	1.43	Wampler+ (1984)	fsrq	FSRQ	0	SDSS
J1534.8 + 3716	RGB J1534 + 372	233.6967	+37.2652	0.143	Laurent-Muehleisen+ (1998)	bll	BLLAC	0	SDSS
J1535.0 + 5320	1ES 1533 + 535	233.7533	+53.3436	0.890	Bade+ (1998)	bll	BLLAC	0	-
J1535.3 − 3135	2MASS J15352963 − 3133461	233.8737	−31.5629	0.253	Table A2	bcu	UNCL	1	-
J1535.4 + 3919	RX J1535.4 + 3922	233.8712	+39.3794	0.257	White+ (2000)	bll	BLLAC	0	SDSS
J1536.8 − 3155	PKS 1533 − 317	234.2271	−31.8542	-	-	bll	BLLAC	2	Titov+ (2011)
J1537.7 − 7957	PMN J1537 − 7958	234.4199	−79.9680	-	-	bcu	UNCL	3	-
J1537.9 − 1344	1RXS J153757.1 − 134334	234.4879	−13.7262	0.984	Table A2	bcu	UNCL	1	-
J1539.6 + 2743	MG2 J153938 + 2744	234.9131	+27.7439	2.20	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J1539.7 − 1127	PMN J1539 − 1128	234.9217	−11.4765	0.837	Table A2	bll	BLLAC	1	Goldoni+ (2021)
J1539.9 + 4220	87GB 153741.6 + 422719	234.8570	+42.2912	0.808	Table A2	bll	BLLAC	1	SDSS
J1540.1 + 8155	1ES 1544 + 820	235.0662	+81.9183	0.227	Table A2	bll	BLLAC	1	Paiano+ (2017)
J1540.4 + 6606	CRATES J1540 + 6605	235.0001	+66.0976	0.693	Table A2	bcu	UNCL	1	-
J1540.7 + 1449	4C +14.60	235.2062	+14.7961	0.606	Stickel+ (1993)	bll	BLLAC	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1541.7 + 1413	WISE J154150.09 + 141437.6	235.4587	+14.2438	0.223	Paiano+ (2019)	bll	BLLAC	0	SDSS
J1541.9 − 2915	NVSS J154203 − 291509	235.5129	−29.2526	1.40	Table A2	bcu	BLLAC	1	Rajagopal+ (2021)
J1542.3 + 1801	OR 167	235.5815	+17.9355	1.66	Wills+Wills (1976)	fsrq	MIS	0	SDSS. Steep radio spectrum, likely an unresolved FRII according to Gendre+ (2008)
J1543.0 + 6130	GB6 J1542 + 6129	235.7373	+61.4987	0.528	Table A2	bll	BLLAC	1	Marchã+Caccianiga (2013) reported a tentative $z = 0.507$, but it was not confirmed in subsequent papers.
J1543.6 + 0452	CGCG 050 − 083	235.8914	+4.8720	0.0400	Karachentseva+ (1988)	agn	BLLAC	0	-
J1544.3 − 0649	NVSS J154419 − 064913	236.0819	−6.8209	0.171	Chornock+Margutti (2017)	bcu	BLLAC	0	-
J1545.8 − 2336	NVSS J154546 − 233929	236.4441	−23.6580	0.121	Jones+ (2009)	bll	BLLAC	0	-
J1546.0 + 0819	RX J1546.0 + 0819	236.5177	+8.3204	1.06	Table A2	bll	BLLAC	1	SDSS
J1546.1 − 1003	PMN J1546 − 1003	236.5478	−10.0573	1.34	Table A2	bll	UNCL	1	-
J1546.5 + 1816	MG1 J154628 + 1817	236.5988	+18.2876	0.538	Table A2	bll	BLLAC	1	SDSS
J1547.3 − 2802	1RXS J154711.8 − 280222	236.8006	−28.0393	0.876	Table A2	bll	UNCL	1	-
J1548.3 + 1456	NVSS J154824 + 145702	237.1016	+14.9508	0.231	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J1548.3 + 6615	NVSS J154831 + 661632	237.1305	+66.2758	0.461	Table A2	bcu	UNCL	1	-
J1548.8 − 2250	PMN J1548 − 2251	237.2073	−22.8507	0.192	Shaw+ (2013)	bll	BLLAC	0	-
J1549.0 + 7846	NVSS J154837 + 784526	237.1561	+78.7574	0.588	Table A2	bcu	BLLAC	1	Hook+ (1996)
J1549.3 + 4234	SDSS J154918.64 + 423500.6	237.3278	+42.5835	0.799	Table A2	bcu	BLLAC	1	SDSS
J1549.3 + 6310	WN B1549 + 6319	237.4888	+63.1687	1.25	Table A2	bll	UNCL	1	-
J1549.4 + 7409	WB J1549 + 7409	237.3638	+74.1589	0.342	Table A2	bcu	UNCL	1	-
J1549.5 + 0236	PKS 1546 + 027	237.3727	+2.6170	0.414	Burbidge+Strittmatter (1972)	fsrq	FSRQ	0	SDSS
J1549.6 + 1710	MG1 J154930 + 1708	237.3720	+17.1411	1.20	Caccianiga+ (2019)	bll	BLLAC	0	SDSS noisy; see Footnote 2 in Caccianiga+ (2019)
J1549.8 − 0659	NVSS J154952 − 065907	237.4668	−6.9855	0.418	Paiano+ (2020)	bll	BLLAC	0	-
J1549.8 − 3044	NVSS J154946 − 304501	237.4429	−30.7503	-	-	bcu	BLLAC	2	Rajagopal+ (2021)
J1550.7 + 0528	4C +05.64	237.6470	+5.4529	1.42	White+ (1988)	fsrq	FSRQ	0	SDSS
J1550.7 + 7006	4C +70.18	237.4852	+70.2156	0.937	Table A2	bcu	UNCL	1	Steep radio spectrum. Stickel+Kühr (1996) classified it as QSO, but neither spectrum information nor redshift was given
J1550.8 − 0822	NVSS J155053 − 082247	237.7220	−8.3797	0.284	Table A2	bll	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1550.8 − 1750	TXS 1548 − 177	237.8108	−17.9173	1.31	Table A2	bcu	UNCL	1	-
J1552.0 + 0850	TXS 1549 + 089	238.0136	+8.8465	0.608	Table A2	bll	BLLAC	1	Shaw+ (2013). Peña-Herazo+ (2021) reported $z = 1.016$ on the basis of a LAMOST spectrum released with the DR5. However, the spectrum is no more present in DR7.
J1553.3 + 0600	NVSS J155331 + 060143	238.3794	+6.0288	0.485	Table A2	bll	BLLAC	1	SDSS
J1553.5 − 3118	1RXS J155333.4 − 311841	238.3898	−31.3087	0.0839	Table A2	bll	BLLAC	1	Ricci+ (2015). Masetti+ (2013) suggested a tentative $z = 0.132$ on the basis of a weak feature identified as Hα
J1553.6 + 1257	PKS 1551 + 130	238.3862	+12.9477	1.31	Cristiani+Koehler (1987)	fsrq	FSRQ	0	SDSS. Savage+Wright (1981) proposed $z = 2.21$
J1553.6 − 2422	PKS 1550 − 242	238.3818	−24.3683	0.332	Shaw+ (2012)	fsrq	SEY	0	Classified as LINER by Shaw+ (2012)
J1554.4 − 1215	GALEXASC J155432.61 − 121325.7	238.6358	−12.2237	0.625	Table A2	bcu	UNCL	1	-
J1554.9 + 2143	TXS 1552 + 218	238.7524	+21.6999	0.541	Table A2	bll	BLLAC	1	SDSS: there are two emission features, which seem to be consistent with $z \sim 0.88$: ~ 9400 Å for [OIII], ~ 7000 Å for [OII]
J1555.7 + 1111	PG 1553 + 113	238.9294	+11.1901	0.028	Table A2	BLL	BLLAC	1	This BL Lac Object has a very long record of attempts to determine the redshift, but today there is no consensus yet. Miller+Green (1983) reported $z = 0.360$ on the basis of a IUE spectrum and two features identified as Lyα and NV, but in a subsequent work (Miller+ 1988), they did not confirm this measurement. A reanalysis of IUE data by Falomo+Treves (1990) did not confirm the presence of these features. Later, the IUE calibrated spectrum was published, showing a prominent Lyα (Kinney+ 1991), but being at the extreme low wavelength end of the spectrum, it might be an artifact. More recent observations by HST/COS did not detect any emission features (Danforth+ 2010). Monroe+ (2016) display a GALEX spectrum, rather noisy, but with a broad and unknown feature at ~ 4600 Å. Abramowski+ (2015) suggested $z = 0.49$ on the basis of the extragalactic background absorption of very-high energy gamma rays. Sometimes, the value $z = 0.360$ is still adopted, perhaps it is consistent with other estimates of lower/upper limits; sometimes, no value is given.
J1557.5 − 7040	PKS 1552 − 705	239.4007	−70.6745	-	-	bll	UNCL	3	-
J1557.9 − 0001	PKS 1555 + 001	239.4643	−0.0307	1.77	Baldwin+ (1981)	fsrq	FSRQ	0	-
J1557.9 − 1404	PKS 1555 − 140	239.5914	−14.1664	0.0974	Peterson+ (1979)	fsrq	SEY	0	6dF

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1558.8 + 5625	TXS 1557 + 565	239.7012	+56.4206	0.397	Table A2	bll	BLLAC	1	SDSS. Falco+ (1998) reported $z = 0.3$ on the basis of the detection of absorption features of the host galaxy (Ca H+K, G) and Hδ. However, more recent observations by Shaw+ (2013) with greater S/N and jet at the lowest activity, never confirmed these detections.
J1559.1 + 6736	NVSS J155856 + 673646	239.7336	+67.6133	0.581	Table A2	bcu	UNCL	1	-
J1559.8 − 2525	NVSS J160005 − 252439	240.0224	−25.4111	0.416	Marchesini+ (2019)	bcu	BLLAC	0	-
J1559.9 + 2319	87GB 155744.0 + 232525	239.9675	+23.2824	0.673	Table A2	bll	BLLAC	1	SDSS
J1600.0 + 8510	WN B1609.6 + 8517	240.1321	+85.1637	0.986	Table A2	bcu	UNCL	1	-
J1602.0 − 0641	NVSS J160146 − 064256	240.4441	−6.7156	1.10	Table A2	bcu	UNCL	1	-
J1602.1 + 3324	OS 300	240.5303	+33.4481	1.1	Snellen+ (2000)	bcu	MIS	1	Classified as CSS/GPS by O'Dea (1998). Many redshift estimates, but none reliable: Wills+Wills (1976) classified it as a star on the basis of absorption features identified as Ca H+K; Wall+Peacock (1985) reported a tentative $z \sim 2$, on the basis of personal communications from colleagues; O'Dea (1998) set $z = 1$ for sources with unknown redshift.
J1602.2 + 3051	RGB J1602 + 308	240.5753	+30.8526	0.860	Table A2	bll	BLLAC	1	SDSS
J1602.9 − 1928	PMN J1602 − 1929	240.7023	−19.4965	1.11	Table A2	bcu	UNCL	1	-
J1603.5 − 7112	PMN J1605 − 7112	241.3161	−71.2165	-	-	bcu	UNCL	3	-
J1603.8 + 1104	MG1 J160340 + 1106	240.9247	+11.0969	0.143	Healey+ (2008)	bll	BLLAC	0	-
J1603.8 + 5009	SDSS J160339.49 + 500955.5	240.9146	+50.1654	0.470	Table A2	bll	BLLAC	1	SDSS
J1604.6 + 5714	GB6 J1604 + 5714	241.1556	+57.2435	0.722	Falco+ (1998)	fsrq	FSRQ	0	SDSS
J1604.7 + 1734	NVSS J160436 + 173324	241.1525	+17.5567	0.674	Table A2	bll	BLLAC	1	SDSS
J1604.9 − 3414	1RXS J160452.5 − 341407	241.2187	−34.2353	-	-	bcu	UNCL	3	-
J1605.1 − 1140	TXS 1602 − 115	241.3230	−11.6575	1.05	Table A2	bcu	BLLAC	1	Desai+ (2019) reported the detection of a weak emission feature at $\sim$ 6800 Å: if [OII], then $z \sim 0.82$; if [OIII], then $z \sim 0.36$. The former might be consistent with another weak feature at $\sim$ 7900 Å identified as Hγ
J1605.5 + 5423	RBS 1555	241.3292	+54.3497	0.212	Rowan-Robinson+ (2004)	bll	BLLAC	0	SDSS. The host is classified as spiral by Rowan-Robinson+ (2004)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1605.8 + 7208	RX J1605.4 + 7208	241.3717	+72.1479	-	-	bcu	AMB	3	The X-ray source is associated at a galaxy cluster with $z = 0.133$ (Böhringer+ 2000). It is likely that the γ-ray emission is due to the brightest radio source, but there is only one found within 2′ from the counterpart coordinates of the 4FGL: NVSS J160534 − 720855 at $\sim 23''$. However, no information are available on this source, except for the NVSS detection
J1606.2 + 1346	MG1 J160619 + 1345	241.5766	+13.7591	0.290	Sowards-Emmerd+ (2005)	bll	BLLAC	0	SDSS
J1606.3 + 5629	RBS 1558	241.5858	+56.5053	0.437	Schwope+ (2000)	bll	SEY	0	SDSS
J1606.5 + 2717	B2 1604 + 27	241.7429	+27.2849	0.933	SDSS	fsrq	FSRQ	0	-
J1606.6 + 1324	NVSS J160654 + 131934	241.7277	+13.3261	-	-	bcu	UNCL	3	-
J1607.0 + 1550	4C 15.54	241.7768	+15.8596	0.496	Shaw+ (2012)	bll	BLLAC	0	The SDSS spectrum is so noisy that the automatic pipeline failed. At $\sim 7200 - 7500$ Å there is the Hβ-[OIII] complex consistent with Shaw's redshift, which was not recognized. Warning: NED associated this source with 3EG J1605 + 1553, for which Sowards-Emmerd+ (2003) proposed the counterpart to be J1603 + 1554, a FSRQ at $z = 0.109$. However, this source is $\sim 50'$ far from 4C +15.54. Maybe there was an error in the epoch of coordinates (4C +15.54 is J1607 + 1551 = B1604 + 159 to be compared with J1603 + 1554).
J1608.0 − 2038	NVSS J160756 − 203942	241.9872	−20.6618	-	-	bll	UNCL	3	-
J1608.3 + 4012	B2 1606 + 40	242.0923	+40.2050	0.628	SDSS	fsrq	FSRQ	0	-
J1608.7 + 1029	4C +10.45	242.1925	+10.4855	1.23	Stickel+Kühr (1994)	fsrq	FSRQ	0	SDSS
J1610.6 + 2414	B2 1608 + 24	242.6751	+24.2469	1.45	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J1610.7 − 6648	PMN J1610 − 6649	242.6936	−66.8170	0.1	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1612.4 − 0554	NVSS J161228 − 055752	243.1198	−5.9650	0.0296	Jones+ (2009)	bll	BLLAC	0	-
J1612.4 − 3100	NVSS J161219 − 305937	243.0834	−30.9941	0.9	Table A2	bll	BLLAC	1	Desai+ (2019)
J1613.3 − 1907	2MASS J16132720 − 1908364	243.3632	−19.1434	0.632	Table A2	bcu	UNCL	1	-
J1613.6 + 3411	OS 319	243.4211	+34.2133	1.40	Burbidge (1970)	fsrq	FSRQ	0	SDSS
J1614.8 − 0850	1RXS J161443.4 − 085130	243.6833	−8.8557	0.344	Table A2	bcu	UNCL	1	-
J1615.6 + 2130	SDSS J161531.09 + 213011.0	243.8796	+21.5031	1.63	SDSS	bcu	FSRQ	0	-
J1615.6 + 4712	B3 1614 + 473	243.9217	+47.1866	0.199	SDSS	fsrq	MIS	0	Classified FRI by Miraghei+Best (2017)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1616.6 + 4630	MG4 J161600 + 4632	244.0157	+46.5403	0.950	SDSS	fsrq	FSRQ	0	-
J1616.7 + 3327	NVSS J161633 + 333043	244.1407	+33.5121	0.572	Table A2	bll	BLLAC	1	SDSS
J1616.7 + 4107	B3 1615 + 412	244.2764	+41.1131	0.267	White+ (2000)	bll	BLLAC	0	SDSS
J1617.2 − 2535	PMN J1617 − 2537	244.3357	−25.6232	1.81	Table A2	bcu	UNCL	1	-
J1617.3 − 1513	NVSS J161713 − 151058	244.3055	−15.1830	0.1	Table A2	bcu	UNCL	1	-
J1617.9 − 7718	PKS 1610 − 77	244.4553	−77.2885	1.71	Hunstead+Murdoch (1980)	fsrq	FSRQ	0	-
J1618.0 + 5139	TXS 1616 + 517	244.3728	+51.6723	2.56	SDSS	fsrq	FSRQ	0	-
J1618.8 + 0620	RX J1618.4 + 0623	244.6275	+6.3697	0.520	Table A2	bll	BLLAC	1	SDSS
J1619.0 + 7536	6C B162034.5 + 754454	244.8073	+75.6315	0.527	Table A2	bcu	UNCL	1	-
J1619.0 − 8346	PKS 1608 − 83	244.9593	−83.8246	0.0625	Table A2	bll	UNCL	1	-
J1619.6 + 5536	87GB 161814.7 + 554307	244.8335	+55.6010	0.464	Table A2	bll	BLLAC	1	SDSS
J1621.7 − 1103	PMN J1621 − 1101	245.4583	−11.0325	-	-	bcu	UNCL	3	-
J1623.4 + 0858	SDSS J162330.56 + 085724.5	245.8773	+8.9567	0.533	SDSS	bcu	BLLAC	0	-
J1623.6 + 5743	TXS 1623 + 578	246.1034	+57.6879	0.789	Vermeulen+ (1996)	fsrq	CLAGN	0	Vermeulen measured some emission lines from a spectrum taken on 1995 June, while Hook+ (1996) reported a featureless spectrum taken on 1992 April
J1624.6 + 5651	SBS 1623 + 569	246.1341	+56.8744	0.64	Meisner+Romani (2010)	bll	BLLAC	1	-
J1625.7 + 4134	4C +41.32	246.4903	+41.5780	2.55	Pearson+Readhead (1988)	fsrq	FSRQ	0	-
J1625.7 − 2527	PKS 1622 − 253	246.4454	−25.4606	0.786	di Serego Alighieri+ (1994)	fsrq	FSRQ	0	An early tentative $z \sim 1.2$ was proposed by Wall+Peacock (1985), but never confirmed.
J1626.0 − 2950	PKS B1622 − 297	246.5251	−29.8575	0.815	Wright+Otrupcek (1999)	FSRQ	FSRQ	0	Caveat: There is neither the spectrum nor any other information published. Curiously, none took a new spectrum after that report. Still to date, this is the only redshift available.
J1626.3 + 3514	RGB J1626 + 352	246.6078	+35.2282	0.498	Kock+ (1996)	bll	BLLAC	0	SDSS
J1626.6 − 7639	PKS 1619 − 765	246.6590	−76.6488	0.105	Ricci+ (2015)	bll	BLLAC	0	-
J1626.8 + 4337	MG4 J162551 + 4346	246.4721	+43.7872	1.05	Brinkmann+ (2000)	fsrq	FSRQ	0	SDSS
J1627.3 + 3148	NVSS J162712 + 314954	246.8041	+31.8322	0.580	SDSS	bll	BLLAC	0	-
J1627.3 + 4758	MG4 J162750 + 4802	246.9426	+48.0569	2.33	SDSS	bcu	FSRQ	0	-
J1627.4 − 3301	1RXS J162725.1 − 330322	246.8546	−33.0562	-	-	bcu	UNCL	3	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1627.7 + 0251	CLASS J1627 + 0251	246.9756	+2.8526	0.472	Table A2	bcu	UNCL	1	-
J1628.3 − 3343	NVSS J162819 − 334342	247.0829	−33.7282	-	-	bcu	UNCL	3	-
J1628.6 + 7706	6C B163030.4 + 771303	247.1377	+77.1139	0.410	Table A2	bll	BLLAC	1	Hook+ (1996)
J1630.6 + 8234	NGC 6251	247.7131	+82.5626	0.0230	Waggett+ (1977)	rdg	MIS	0	FRI. Waggett cited a personal communication for the redshift. The first optical spectrum is displayed in Miley+Osterbrock (1979). The counterpart coordinates in the 4FGL refer to the radio source marked as B3 in Mukherjee+ (2002), which was identified as the jet of NGC 6251. This radio source is $\sim 3.6'$ from the VLBI core of the radio galaxy.
J1630.7 + 5221	TXS 1629 + 524	247.6798	+52.3607	0.492	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1631.2 + 1046	MG1 J163119 + 1051	247.8282	+10.8673	0.866	Table A2	bcu	UNCL	1	-
J1631.2 + 4926	TXS 1629 + 495	247.8189	+49.4610	0.518	Hook+ (1996)	fsrq	SEY	0	SDSS
J1632.4 + 5800	1RXS J163213.2 + 580109	248.0577	+58.0146	0.234	Table A2	bcu	UNCL	1	-
J1632.8 − 1048	TXS 1630 − 107	248.2088	−10.8756	1.26	Table A2	bcu	UNCL	1	-
J1635.2 + 3808	4C +38.41	248.8146	+38.1346	1.81	Strittmatter+ (1974)	FSRQ	FSRQ	0	SDSS
J1635.6 + 3500	MG2 J163505 + 3458	248.7782	+34.9812	0.520	Table A2	bcu	BLLAC	1	SDSS
J1635.6 + 3628	MG3 J163554 + 3629	248.9468	+36.4917	3.65	SDSS	fsrq	FSRQ	0	-
J1636.3 + 7128	7C 1636 + 7134	248.9672	+71.4816	0.171	Appenzeller+ (1998)	bcu	FSRQ	0	-
J1636.5 − 0454	NVSS J163631 − 045506	249.1333	−4.9184	0.174	Table A2	bcu	UNCL	1	-
J1636.7 + 2627	NVSS J163651 + 262657	249.2145	+26.4491	0.44	Table A2	bll	BLLAC	1	SDSS: if the feature at $\sim$ 4100 Å is CIV, and that at $\sim$ 8350 Å is OIII, then $z \sim 1.6$
J1637.1 + 1316	1RXS J163717.1 + 131418	249.3197	+13.2441	0.656	Sandrinelli+ (2013)	bll	BLLAC	0	-
J1637.2 + 4327	1RXS J163711.1 + 432548	249.2896	+43.4334	0.343	SDSS	bll	BLLAC	0	-
J1637.6 + 4548	B3 1635 + 458	249.3611	+45.7970	0.192	SDSS	bll	BLLAC	0	-
J1637.7 + 4717	4C +47.44	249.4380	+47.2927	0.735	Walsh+Carswell (1982)	fsrq	FSRQ	0	SDSS
J1637.7 + 7326	RX J1637.9 + 7326	249.5069	+73.4377	0.892	Table A2	bll	BLLAC	1	Appenzeller+ (1998)
J1638.1 + 5721	OS 562	249.5561	+57.3400	0.751	Walsh+ (1979)	fsrq	FSRQ	0	-
J1639.2 + 4129	MG4 J163918 + 4127	249.8159	+41.4760	0.691	SDSS	fsrq	FSRQ	0	-
J1640.2 + 0629	NVSS J164011 + 062827	250.0461	+6.4742	0.437	Table A2	bcu	BLLAC	1	Desai+ (2019)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1640.3 + 6850	NVSS J164014 + 685231	250.0623	+68.8761	0.715	Table A2	bcu	UNCL	1	-
J1640.4 + 3945	NRAO 512	250.1235	+39.7795	1.67	Stickel+Kühr (1989)	FSRQ	FSRQ	0	SDSS
J1640.9 + 1143	TXS 1638 + 118	250.2454	+11.7345	0.0799	Mitton+ (1977)	bll	BLLAC	0	-
J1641.9 − 0621	TXS 1639 − 062	250.5091	−6.3566	0.718	Table A2	bll	BLLAC	1	Sowards-Emmerd+ (2004) reported an uncertain $z = 1.5143$ measured on a spectrum taken at HET on 2003 April or June (no exact date is given). However, Shaw+ (2013) reported no features on a spectrum taken at HET on MJD 52756 (2003 April 27). It seems to be a reanalysis of the same spectrum.
J1642.3 − 8108	PKS 1633 − 810	250.7389	−81.1431	-	-	bll	BLLAC	2	Titov+ (2011)
J1642.4 + 2211	1RXS J164220.4 + 221132	250.5846	+22.1953	0.592	SDSS	bll	BLLAC	0	-
J1642.9 + 3948	3C 345	250.7450	+39.8103	0.593	Burbidge (1965)	FSRQ	FSRQ	0	SDSS
J1643.0 + 3223	NVSS J164301 + 322104	250.7544	+32.3511	1.42	Table A2	bll	BLLAC	1	SDSS
J1643.0 − 7714	PKS 1636 − 77	251.0672	−77.2636	0.0427	Simpson+ (1993)	bll	MIS	0	Classified as FRII by Morganti+ (1993)
J1643.5 − 0646	NVSS J164328 − 064619	250.8705	−6.7722	0.0820	Shaw+ (2013)	bll	BLLAC	0	-
J1643.7 + 3317	RX J1643.5 + 3316	250.9144	+33.2800	0.492	Table A2	bcu	BLLAC	1	SDSS
J1644.2 + 4546	B3 1642 + 458	251.0832	+45.7790	0.225	Kock+ (1996)	bll	BLLAC	0	SDSS
J1644.9 + 2620	MG2 J164443 + 2618	251.1772	+26.3203	0.144	Bade+ (1995)	NLSY1	NLS1	0	SDSS. Classified NLS1 by Véron-Cetty+Véron (2001)
J1645.6 + 6329	TXS 1645 + 635	251.4940	+63.5030	2.38	Henstock+ (1997)	fsrq	FSRQ	0	-
J1646.0 − 0942	1RXS J164602.3 − 094113	251.5049	−9.6884	0.187	Table A2	bcu	UNCL	1	-
J1646.6 + 7422	7C 1647 + 7424	251.5632	+74.3197	0.920	Table A2	bcu	UNCL	1	-
J1646.7 − 1330	TXS 1644 − 133	251.7157	−13.4800	0.3	Table A2	bcu	UNCL	1	Ultra steep radio spectrum ($\alpha \sim -1.32$), De Breuck+ (2000), likely MIS
J1647.4 − 6438	PMN J1647 − 6437	251.9073	−64.6334	0.359	Table A2	bcu	BLLAC	1	Rajagopal+ (2021)
J1647.5 + 2911	B2 1645 + 29	251.8620	+29.1638	0.133	Marchã+ (1996)	bll	BLLAC	0	SDSS
J1647.5 + 4950	SBS 1646 + 499	251.8955	+49.8335	0.0490	Marchã+ (1996)	bll	SEY	0	S0 host galaxy. In 2009, a SNII exploded in the host galaxy (2009fe; see, for example, fig. 15 in Hakobyan+ 2012)
J1648.0 + 2221	MG2 J164800 + 2224	252.0064	+22.4092	0.823	SDSS	bcu	BLLAC	0	-
J1648.2 + 4232	NVSS J164831 + 423322	252.1313	+42.5562	2.5	Schmidt+ (2006)	bcu	FSRQ	1	Schmidt classified it as Extremely Red Object (ERO): obscuration?
J1649.4 + 5235	87GB 164812.2 + 524023	252.3541	+52.5875	0.291	Table A2	bll	BLLAC	1	Ricci+ (2015)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1649.6 + 0411	PKS 1646 + 042	252.3653	+4.2011	0.711	Table A2	bcu	UNCL	1	-
J1650.7 + 0831	MG1 J165034 + 0824	252.6565	+8.4145	1.97	Healey+ (2008)	fsrq	FSRQ	0	-
J1650.9 + 0429	1RXS J165053.5 + 043009	252.7229	+4.5026	-	-	bcu	UNCL	3	-
J1651.6 + 7219	RX J1651.6 + 7218	252.9165	+72.3069	0.113	Table A2	bll	BLLAC	1	Appenzeller+ (1998)
J1652.7 + 4024	RX J1652.7 + 4023	253.2080	+40.3862	0.669	Table A2	bll	BLLAC	1	SDSS
J1653.8 + 3945	Mkn 501	253.4676	+39.7602	0.0335	Wills+Wills (1974)	BLL	BLLAC	0	-
J1656.0 + 2047	MG2 J165546 + 2043	253.9440	+20.7563	1.08	Table A2	bcu	UNCL	1	-
J1656.9 − 2010	NVSS J165655 − 201056	254.2298	−20.1823	-	-	bll	BLLAC	2	6dF
J1657.0 + 6010	RGB J1656 + 602	254.2010	+60.2046	0.623	Landt+ (2001)	fsrq	FSRQ	0	-
J1657.7 + 4808	4C +48.41	254.4453	+48.1425	1.67	Ackermann+ (2011)	fsrq	CLAGN	0	The optical follow-up should have been published in other papers, but none was found. Previous observations found a featureless spectrum (Healey+ 2008) or did not detect any object (Hook+ 1996)
J1657.7 − 6120	PMN J1657 − 6121	254.4542	−61.3605	-	-	bcu	UNCL	3	Titov+ (2017) took a low S/N spectrum; no information available
J1658.4 + 6150	NVSS J165808 + 615001	254.5347	+61.8339	0.374	SDSS	bll	BLLAC	0	-
J1659.0 + 2627	4C +26.51	254.8506	+26.4936	0.795	Wills+Wills (1974)	fsrq	FSRQ	0	SDSS
J1700.0 + 6830	TXS 1700 + 685	255.0387	+68.5019	0.301	Henstock+ (1997)	fsrq	NLS1	0	Henstock measured FWHM(Hβ)$\sim$ 1707 km/s
J1701.0 + 6613	7C 1700 + 6616	255.2466	+66.2076	0.795	Table A2	bcu	UNCL	1	-
J1701.3 + 3956	B3 1659 + 399	255.3526	+39.9103	0.507	Healey+ (2008)	bll	BLLAC	0	SDSS. Curiously, SDSS automatic pipeline measured the redshift correctly until DR7, but it failed in more recent releases, although the spectrum displays features (Ca H+K, [OII], [OIII]) consistent with Healey's measurement
J1702.2 + 2642	MG2 J170210 + 2643	255.5401	+26.7207	0.632	Table A2	bll	BLLAC	1	Ricci+ (2015)
J1702.6 + 3114	RX J1702.6 + 3115	255.6606	+31.2621	0.701	Table A2	bll	BLLAC	1	SDSS
J1703.6 − 6213	MRC 1659 − 621	255.9023	−62.2111	1.75	Titov+ (2011)	fsrq	FSRQ	0	-
J1704.1 + 7647	NVSS J170357 + 764611	255.9912	+76.7695	0.592	Table A2	bcu	UNCL	1	-
J1704.2 + 1234	NVSS J170409 + 123421	256.0399	+12.5726	0.452	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J1704.5 − 0527	NVSS J170433 − 052839	256.1410	−5.4780	1.26	Table A2	bll	BLLAC	1	Peña-Herazo+ (2020)
J1705.0 + 7134	GB6 J1704 + 7138	256.1957	+71.6382	0.350	Nilsson+ (2003)	bll	BLLAC	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1705.5 − 7423	1RXS J170548.1 − 742240	256.4504	−74.3778	-	-	bll	UNCL	3	The X-ray source corresponds to a galaxy cluster at $z \sim 0.19$ (Kocevski+ 2007). No radio counterpart is found around 1 arcmin from the X-ray centroid
J1706.1 + 1000	NVSS J170556 + 100006	256.4841	+10.0049	0.345	Table A2	bcu	UNCL	1	-
J1706.9 + 4543	4C +45.34	256.8241	+45.6032	0.645	Walsh+ (1979)	fsrq	FSRQ	0	SDSS
J1707.5 + 1649	MG1 J170732 + 1649	256.8815	+16.8124	0.291	de Menezes+ (2020)	fsrq	SEY	0	Only strong forbidden oxygen lines
J1707.9 + 0016	NVSS J170744 + 001750	256.9351	+0.2970	0.841	Table A2	bcu	UNCL	1	-
J1709.7 + 4318	B3 1708 + 433	257.4212	+43.3124	1.03	Healey+ (2008)	fsrq	FSRQ	0	SDSS
J1710.1 − 2030	TXS 1707 − 204	257.5405	−20.5085	-	-	bcu	UNCL	3	Steep radio spectrum ($\alpha \sim -0.88$)
J1712.7 + 2932	RX J1712.8 + 2931	258.2033	+29.5213	0.304	Table A2	bll	BLLAC	1	SDSS
J1713.7 + 8844	NVSS J171602 + 884416	258.9721	+88.7376	0.624	Table A2	bcu	UNCL	1	-
J1714.0 − 2029	1RXS J171405.2 − 202747	258.5227	−20.4637	-	-	bcu	UNCL	3	-
J1715.0 + 2616	MG2 J171454 + 2614	258.7076	+26.2384	0.310	Table A2	bcu	UNCL	1	-
J1715.8 + 2151	B2 1714 + 21	259.0466	+21.8705	0.358	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	Hook+ (1996) reported a noisy spectrum and no redshift measured, but there is a feature at $\sim$ 6800 Å, which is consistent with [OIII] at 5007 Å.
J1716.1 + 6836	S4 1716 + 68	259.0581	+68.6108	0.339	Britzen+ (2008)	fsrq	FSRQ	0	Hewitt+Burbidge (1993) reported $z = 0.777$ measured by Kühr (1980, PhD thesis) on the basis of one single feature identified as MgII. Stickel+Kühr (1994) adjusted the value to $z = 0.798$, but Britzen+ (2008) took a new better spectrum with many lines (Hα, Hβ, [OII], [OIII]) and measured $z = 0.339$
J1716.6 − 6707	PKS 1711 − 670	259.0931	−67.1067	0.157	Table A2	bcu	BLLAC	1	Titov+ (2017)
J1717.3 − 6045	PMN J1716 − 6045	259.2327	−60.7624	-	-	bcu	UNCL	3	-
J1717.5 − 8114	1RXS J171712.6 − 811501	259.2978	−81.2527	0.059	Table A2	bll	UNCL	1	-
J1719.2 + 1745	PKS 1717 + 177	259.8044	+17.7518	0.137	Sowards-Emmerd+ (2005)	bll	BLLAC	0	-
J1719.3 + 1205	87GB 171701.0 + 121016	259.8396	+12.1228	0.407	Table A2	bcu	UNCL	1	-
J1720.2 + 3824	SDSS J172010.33 + 382556.1	260.0431	+38.4323	0.454	SDSS	bcu	AMB	0	The SDSS spectrum seems a Seyfert 1.9; radio spectrum is steep ($\alpha \sim -0.7$). Likely a SEY or MIS
J1722.6 + 6104	GB6 J1722 + 6105	260.6669	+61.0999	2.06	Sowards-Emmerd+ (2003)	fsrq	FSRQ	0	-
J1722.7 + 1014	TXS 1720 + 102	260.6858	+10.2266	0.732	Afanas'ev+ (2005)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1723.6 − 7714	PKS 1716 − 771	260.9619	−77.2307	-	-	bcu	UNCL	3	-
J1724.1 + 3304	B2 1722 + 33	261.0592	+33.0511	0.548	SDSS	fsrq	SEY	0	Hewitt+Burbidge (1993) reported $z = 1.87$ from a personal communication by Wills+ (1979): it seems that they have misidentified the emission line at $\sim$ 4500 Å with CIV instead of MgII. The SDSS spectrum shows a weak Hβ and prominent oxygen lines, suggesting an obscured object, but the radio spectrum is flat.
J1724.2 + 4005	S4 1722 + 40	261.0226	+40.0768	1.05	Vermeulen+ (1996)	fsrq	BLLAC	0	Henstock+ (1997) reported a featureless spectrum, likely due to the jet activity
J1724.2 − 6501	NGC 6328	260.9210	−65.0102	0.0145	Forbes+ (1977)	rdg	MIS	0	CSO/GPS very young FRII, SA host galaxy, Angioni+ (2019)
J1724.9 + 7654	S5 1726 + 76	260.9977	+76.8865	0.680	Stickel+Kühr (1994)	fsrq	FSRQ	0	No [OIII] lines
J1725.0 + 1152	1H 1720 + 117	261.2681	+11.8710	0.028	Table A2	bll	BLLAC	1	Griffiths+ (1989) published an optical spectrum with two strong absorption features suggesting $z \sim 0.018$. However, the unresolved host galaxy suggests a greater value (e.g., Sbarufatti+ 2006 set $z > 0.68$)
J1725.4 + 5254	RX J1725.3 + 5255	261.3358	+52.9189	0.061	SDSS	bcu	BLLAC	0	Warning: the coordinates in the 4FGL are consistent with Simbad, but differ of $\sim 7''$ from NED. SDSS offers two sources: a star for the former and a BL Lac for the latter (NVSS 172520 + 525455). Both are consistent with the ROSAT source, but the BL Lac is the more reliable source of X- and γ rays
J1725.5 + 5851	7C 1724 + 5854	261.3959	+58.8611	0.398	Table A2	bll	BLLAC	1	Paggi+ (2014). Marleau+ (2007) suggested a tentative $z \sim 0.2974$
J1727.2 + 0644	NVSS J172720 + 064123	261.8335	+6.6893	-	-	bcu	UNCL	3	-
J1727.4 + 4530	S4 1726 + 45	261.8652	+45.5110	0.717	Stickel+Kühr (1997)	fsrq	FSRQ	0	-
J1727.9 − 0654	PKS 1725 − 06	261.9655	−6.9690	-	-	bcu	UNCL	3	Steep radio spectrum ($\alpha \sim -0.83$), MIS?
J1728.0 + 1216	PKS 1725 + 123	262.0294	+12.2610	0.586	Afanas'ev+ (2005)	fsrq	FSRQ	0	-
J1728.3 + 5013	I Zw 187	262.0776	+50.2196	0.0554	Oke (1978)	bll	BLLAC	0	-
J1728.4 + 0427	PKS 1725 + 044	262.1040	+4.4514	0.293	Peterson+ (1979)	fsrq	FSRQ	0	-
J1728.5 − 7303	PKS 1719 − 729	261.5046	−73.0000	-	-	bcu	UNCL	3	-
J1728.6 − 7448	MRC 1722 − 748	262.1886	−74.8976	-	-	bcu	UNCL	3	Steep radio spectrum ($\alpha \sim -0.93$), MIS?
J1730.6 + 0024	PKS 1728 + 004	262.6458	+0.4107	1.34	Hook+ (2003)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1730.6 + 3805	NVSS J173044 + 380452	262.6866	+38.0819	0.166	Table A2	bcu	UNCL	1	-
J1730.8 + 3715	GB6 J1730 + 3714	262.6960	+37.2486	0.204	Shaw+ (2013)	bll	BLLAC	0	-
J1733.0 − 1305	PKS 1730 − 13	263.2613	−13.0804	0.902	Bolton+ (1981)	fsrq	FSRQ	0	-
J1733.4 + 5428	SDSS J173340.31 + 542636.9	263.4180	+54.4435	0.400	Table A2	bll	BLLAC	1	SDSS
J1733.6 − 6054	PMN J1733 − 6055	263.4101	−60.9283	-	-	bcu	UNCL	3	-
J1734.0 + 0805	NVSS J173400 + 080628	263.5022	+8.1079	-	-	bcu	UNCL	3	-
J1734.3 + 3858	B2 1732 + 38A	263.5857	+38.9643	0.976	Stickel+ (1989)	fsrq	FSRQ	0	-
J1735.4 − 1118	PMN J1735 − 1117	263.8632	−11.2929	0.705	Table A2	bcu	UNCL	1	-
J1735.8 − 5932	WISEA J173553.24 − 593204.6	263.9712	−59.5349	0.215	Table A2	bcu	UNCL	1	-
J1736.0 + 2033	NVSS J173605 + 203301	264.0219	+20.5503	0.800	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J1736.6 + 0628	MG1 J173624 + 0632	264.1191	+6.5299	2.39	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J1738.0 + 0236	PKS 1735 + 026	264.3947	+2.6140	0.177	Table A2	bcu	UNCL	1	-
J1738.0 + 8717	6C B175708 + 871924	264.3420	+87.2957	-	-	bcu	UNCL	3	-
J1738.3 + 3228	MG2 J173841 + 3224	264.6688	+32.4025	0.126	Laurent-Muehleisen+ (1998)	fsrq	SEY	0	Laurent-Muehleisen also classified the source as BLRG on the basis of the Ca H+K break, but the radio spectrum is flat.
J1738.8 + 3822	NVSS J173842 + 382104	264.6770	+38.3507	0.244	Table A2	bcu	UNCL	1	-
J1739.5 + 4955	S4 1738 + 49	264.8641	+49.9176	1.55	Stickel+Kühr (1994)	fsrq	FSRQ	0	-
J1740.0 + 4737	S4 1738 + 47	264.9880	+47.6329	0.570	Table A2	fsrq	BLLAC	1	Featureless, Xu+ (1994). A nearby star generated some confusion in early optical observations: see the note in Stickel+Kühr (1993). Later, Stickel+Kühr (1994) reported a preliminary $z = 0.316$ by Xu+ (1994), which was not confirmed in the Xu's paper. Britzen+ (2008) reported $z = 0.950$, but its origin is unknown and the value was never confirmed.
J1740.5 + 5211	4C +51.37	265.1541	+52.1954	1.38	Walsh+ (1979)	fsrq	FSRQ	0	LAMOST
J1740.6 + 5346	87GB 173932.3 + 534742	265.1522	+53.7733	0.755	Table A2	bll	UNCL	1	-
J1741.1 + 7226	GB6 J1741 + 7224	265.3452	+72.4144	0.220	Caccianiga+ (2002)	bll	BLLAC	0	-
J1741.9 + 2555	NVSS J174147 + 255443	265.4482	+25.9120	0.610	Table A2	bcu	BLLAC	1	LAMOST
J1742.5 + 5944	RGB J1742 + 597	265.6333	+59.7519	0.4	Nilsson+ (2003)	bll	BLLAC	1	-
J1743.9 + 3747	B3 1742 + 378	265.9485	+37.7983	1.96	Falco+ (1998)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1744.0 + 1935	S3 1741 + 19	265.9910	+19.5858	0.084	Heidt+ (1999)	bll	BLLAC	0	Triple interacting system
J1744.2 − 0353	PKS 1741 − 03	265.9952	−3.8346	1.05	White+ (1988)	fsrq	FSRQ	0	-
J1744.4 + 1851	1RXS J174420.1 + 185215	266.0825	+18.8717	0.605	Table A2	bll	BLLAC	1	Peña-Herazo+ (2020)
J1744.6 − 5713	PMN J1744 − 5715	266.1479	−57.2530	-	-	bll	UNCL	3	-
J1745.1 + 4731	NVSS J174501 + 473247	266.2580	+47.5462	0.999	Table A2	bcu	UNCL	1	-
J1745.4 − 0753	TXS 1742 − 078	266.3629	−7.8844	0.854	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1745.6 + 3950	B2 1743 + 39C	266.4073	+39.8586	0.267	Laurent-Muehleisen+ (1998)	bll	BLLAC	0	Steep radio spectrum, Rector+ (2003) reported an unusual FRI-like strongly-distorted morphology, but core dominated. It acts as gravitational lens for a background galaxy (Heidt+ 1997, Nilsson+ 1999, Lietzen+ 2008).
J1746.8 − 5235	PMN J1747 − 5236	266.7737	−52.6090	-	-	bcu	UNCL	3	-
J1747.1 − 5453	PMN J1747 − 5450	266.8518	−54.8393	-	-	bcu	UNCL	3	-
J1747.2 + 4937	RX J1747.0 + 4938	266.7596	+49.6336	0.460	Piranomonte+ (2007)	bll	BLLAC	0	-
J1747.6 − 5308	PMN J1747 − 5310	266.8342	−53.1723	-	-	bcu	UNCL	3	-
J1747.9 + 4704	B3 1746 + 470	266.8610	+46.9808	0.785	Table A2	bll	BLLAC	1	Vermeulen+ (1996). They also found some absorption features and sets $z > 1.484$, but this lower limit was then taken as an exact value in the subsequent literature
J1748.0 + 3403	MG2 J174803 + 3403	267.0242	+34.0670	2.76	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J1748.1 + 2702	87GB 174618.6 + 270457	267.0698	+27.0759	0.644	Table A2	bcu	UNCL	1	-
J1748.6 + 7005	S4 1749 + 70	267.1368	+70.0974	0.770	Arp+ (1976)	bll	BLLAC	0	-
J1749.0 + 4321	B3 1747 + 433	267.2515	+43.3642	0.316	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1751.5 + 0938	OT 081	267.8867	+9.6502	0.320	Stickel+ (1988)	bll	CLAGN	0	The $z = 0.19$ in the note by Falomo+ (1993) is clearly a typo
J1751.6 + 2921	MG2 J175143 + 2921	267.9278	+29.3473	0.736	Table A2	bcu	UNCL	1	-
J1752.1 + 4531	B3 1751 + 455A	268.1091	+45.5165	0.207	Table A2	bcu	UNCL	1	-
J1753.6 − 5014	PMN J1753 − 5015	268.4106	−50.2540	-	-	bcu	UNCL	3	-
J1753.7 + 2847	B2 1751 + 28	268.4270	+28.8014	1.12	Healey+ (2008)	fsrq	FSRQ	0	-
J1754.2 + 3212	RX J1754.1 + 3212	268.5492	+32.2064	0.659	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1754.5 − 6425	PMN J1754 − 6423	268.6750	−64.3961	1.26	Shaw+ (2013)	bll	BLLAC	0	Tentative, based on the identification of one single line as MgII

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1754.7 + 3444	MG2 J175448 + 3442	268.7129	+34.7131	0.544	Table A2	bcu	UNCL	1	-
J1756.3 + 5522	RX J1756.1 + 5522	269.0662	+55.3717	1.48	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1756.6 + 1553	PKS 1754 + 159	269.1405	+15.8955	0.547	Healey+ (2008)	fsrq	FSRQ	0	Early observations were inconclusive, because of featureless spectra. Healey reported the z and classification, but no other information is given, so that it is not possible to understand if there was an intrinsic change of the source or just an improved instrument sensitivity
J1756.9 + 1531	87GB 175437.6 + 153548	269.2213	+15.5891	2.06	Truebenbach+Darling (2017)	bcu	BLLAC	0	Warning: the detected lines fit also well with $z = 0.05$, but this value is excluded by the non-detection of the host galaxy
J1757.0 + 7032	MS 1757.7 + 7034	269.3052	+70.5604	0.407	Stocke+ (1991)	bll	BLLAC	0	-
J1758.2 + 6532	7C 1757 + 6536	269.3497	+65.6027	0.755	Shim+ (2013)	bcu	BLLAC	0	-
J1758.3 + 1429	87GB 175603.3 + 143022	269.5800	+14.4991	0.152	Table A2	bcu	UNCL	1	-
J1759.1 − 4822	PMN J1758 − 4820	269.7436	−48.3535	-	-	bcu	UNCL	3	-
J1800.1 + 2812	NVSS J180002 + 281050	270.0085	+28.1794	0.382	Table A2	bcu	UNCL	1	-
J1800.1 + 7037	RX J1759.8 + 7037	269.9542	+70.6226	-	-	bll	BLLAC	2	Gioia+ (2003)
J1800.6 + 7828	S5 1803 + 784	270.1903	+78.4678	0.684	Stickel+ (1993)	bll	CLAGN	0	Lawrence+ (1987) took two spectra, the second thirteen months after the first: the first spectrum was quasar-like, while the second one was almost featureless.
J1801.5 + 2123	87GB 175915.8 + 212212	270.3520	+21.3626	-	-	bcu	UNCL	3	-
J1801.5 + 4404	S4 1800 + 44	270.3846	+44.0728	0.663	Walsh+Carswell (1982)	fsrq	FSRQ	0	Spectrum from Torrealba+ (2012)
J1803.4 − 6510	PKS 1758 − 651	270.8479	−65.1269	1.20	Titov+ (2011)	fsrq	FSRQ	0	-
J1806.2 + 6143	TXS 1805 + 616	271.5831	+61.6884	0.679	Table A2	bcu	UNCL	1	-
J1806.3 + 5345	TXS 1805 + 537	271.6346	+53.7143	0.960	Table A2	bcu	UNCL	1	-
J1806.8 + 6949	3C 371	271.7112	+69.8245	0.0495	Sandage (1966)	bll	BLLAC	0	Multiple interacting system (Arp 1970, Stickel+ 1993)
J1806.9 − 8038	PKS 1757 − 807	271.6785	−80.7093	-	-	bcu	UNCL	3	-
J1807.2 + 6429	7C 1807 + 6428	271.8840	+64.4906	0.239	Gioia+ (2003)	bll	BLLAC	0	Gioia identified the ROSAT source as a cluster of galaxies; no spectrum published, no other information. The radio spectrum is borderline ($\alpha \sim -0.47$), but the LAT spectrum is typical of a BLLAC ($\Gamma \sim 2$)
J1807.9 + 4650	RGB J1808 + 468	272.0050	+46.8280	0.45	Nilsson+ (2003)	bll	BLLAC	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1807.9 − 6412	PMN J1807 − 6413	271.9751	−64.2306	1.02	Healey+ (2008)	fsrq	FSRQ	0	-
J1808.1 − 5013	PMN J1808 − 5011	272.0576	−50.1982	1.61	Landt+ (2001)	fsrq	FSRQ	0	-
J1808.2 + 3500	MG2 J180813 + 3501	272.0480	+35.0219	0.365	Table A2	bll	UNCL	1	-
J1808.8 + 2419	1RXS J180847.3 + 241923	272.1904	+24.3183	0.461	Table A2	bcu	UNCL	1	-
J1808.8 + 3522	2MASX J18084968 + 3520426	272.2071	+35.3452	0.142	Peña-Herazo+ (2019)	bll	BLLAC	0	-
J1809.3 + 2042	RX J1809.3 + 2041	272.3560	+20.6919	0.167	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1809.7 + 2910	MG2 J180948 + 2910	272.4391	+29.1722	0.532	Table A2	bll	BLLAC	1	Ricci+ (2015)
J1810.7 + 5335	2MASS J18103800 + 5335016	272.6583	+53.5838	0.556	Table A2	bll	BLLAC	1	Peña-Herazo+ (2020)
J1811.0 + 1608	87GB 180835.5 + 160714	272.7090	+16.1391	1.36	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1811.3 + 0340	NVSS J181118 + 034113	272.8251	+3.6871	0.717	Table A2	bll	UNCL	1	-
J1813.5 + 3144	B2 1811 + 31	273.3967	+31.7382	0.117	Giommi+ (1991)	bll	BLLAC	0	-
J1813.6 + 0614	TXS 1811 + 062	273.3892	+6.2617	0.838	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1814.0 + 3828	2MASS J18140339 + 3828107	273.5143	+38.4695	0.275	Peña-Herazo+ (2020)	bll	BLLAC	0	-
J1814.2 + 4114	B3 1812 + 412	273.5946	+41.2182	1.56	Henstock+ (1997)	fsrq	FSRQ	0	-
J1814.4 + 2953	B2 1811 + 29	273.4053	+29.8772	1.35	Halpern+ (2003)	fsrq	FSRQ	0	-
J1816.9 − 4942	PMN J1816 − 4943	274.2333	−49.7291	1.70	Titov+ (2017)	fsrq	FSRQ	0	-
J1818.6 + 0903	MG1 J181841 + 0903	274.6669	+9.0628	0.354	Shaw+ (2012)	fsrq	NLS1	0	Shaw reported FWHM(Hβ)= 1600 ± 200 km/s
J1819.1 + 2133	MG2 J181902 + 2132	274.7717	+21.5427	0.715	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J1820.3 + 3624	NVSS J182021 + 362343	275.0874	+36.3953	0.319	Table A2	bll	BLLAC	1	Marchesi+ (2018)
J1821.6 + 6819	7C 1822 + 6816	275.4979	+68.3119	1.69	Gioia+ (2004)	bcu	FSRQ	0	-
J1822.0 + 1600	OU 134	275.5415	+16.0041	1.13	Table A2	bcu	UNCL	1	-
J1823.3 − 3720	PMN J1823 − 3724	275.8012	−37.4010	-	-	bcu	UNCL	3	-
J1823.5 + 6858	7C 1823 + 6856	275.8869	+68.9646	2.14	Truebenbach+Darling (2017)	bll	CLAGN	0	Shaw+ (2013) reported a featureless spectrum, while Truebenbach+Darling found prominent emission lines
J1824.1 + 5651	4C +56.27	276.0295	+56.8504	0.664	Lawrence+ (1986)	bll	BLLAC	0	-
J1824.5 + 4311	RX J1824.2 + 4309	276.0794	+43.1637	0.253	Table A2	bcu	BLLAC	1	Stern+Assef (2013). Ackermann+ (2011) proposed $z = 0.487$, but it was never confirmed in the Shaw's publications.
J1825.1 − 5231	PKS 1821 − 525	276.3075	−52.5162	-	-	bcu	UNCL	3	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1826.0 − 5037	SUMSS J182551 − 503914	276.4618	−50.6543	0.9	Table A2	bcu	UNCL	1	-
J1827.6 − 4029	1RXS J182724.8 − 402904	276.8533	−40.4844	-	-	bcu	UNCL	3	-
J1828.7 + 3230	B2 1826 + 32D	277.1479	+32.5189	-	-	bcu	UNCL	3	Steep radio spectrum ($\alpha \sim -0.8$)
J1829.1 + 2729	87GB 182712.0 + 272717	277.3082	+27.4841	-	-	bcu	UNCL	3	-
J1829.2 − 5813	PKS 1824 − 582	277.3017	−58.2320	1.53	Healey+ (2008)	fsrq	FSRQ	0	-
J1829.3 + 5402	RX J1829.3 + 5403	277.3512	+54.0499	0.404	Table A2	bll	BLLAC	1	Shaw+ (2013
J1829.5 + 4845	3C 380	277.3824	+48.7462	0.690	Lynds+ (1965)	css	MIS	0	Classified as FRII by Zensus+ (2002)
J1829.9 + 3934	NVSS J183003 + 393638	277.5151	+39.6106	0.450	Table A2	bcu	UNCL	1	-
J1830.0 + 1324	MG1 J183001 + 1323	277.5032	+13.4040	0.773	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1830.0 − 5225	SUMSS J183004 − 522618	277.5180	−52.4386	-	-	bll	UNCL	3	-
J1830.2 − 4443	PMN J1830 − 4441	277.5036	−44.6866	-	-	bcu	UNCL	3	-
J1831.9 + 3820	1RXS J183202.2 + 382132	278.0041	+38.3603	0.216	de Menezes+ (2020)	bll	BLLAC	0	-
J1832.6 − 5658	PMN J1832 − 5659	278.1291	−56.9891	-	-	bll	BLLAC	2	Shaw+ (2013)
J1834.2 + 3136	4C +31.51	278.5756	+31.6068	0.236	Table A2	fsrq	BLLAC	1	Schmidt (1974)
J1834.7 − 5858	PKS 1830 − 589	278.6145	−58.9434	-	-	bll	BLLAC	2	Sbarufatti+ (2009)
J1836.4 + 3137	RX J1836.2 + 3136	279.0885	+31.6074	0.427	Table A2	bll	BLLAC	1	Massaro+ (2015)
J1837.0 + 5347	NVSS J183710 + 534704	279.2947	+53.7850	0.919	Table A2	bcu	UNCL	1	-
J1838.0 − 5959	SUMSS J183806 − 600033	279.5281	−60.0089	0.2	Table A2	bll	UNCL	1	-
J1838.4 − 6023	2MASS J18382063 − 6025224	279.5860	−60.4229	0.121	Jones+ (2009)	bll	BLLAC	0	6dF
J1838.8 + 4802	GB6 J1838 + 4802	279.7048	+48.0429	0.3	Nilsson+ (2003)	bll	BLLAC	1	-
J1838.9 − 3457	AT20G J183923 − 345348	279.8482	−34.8969	0.454	Table A2	bcu	UNCL	1	-
J1839.6 − 7107	PKS 1831 − 711	279.3696	−71.1454	1.36	Jauncey+ (1984)	fsrq	FSRQ	0	-
J1840.6 − 5545	PMN J1841 − 5544	280.3229	−55.7381	-	-	bcu	UNCL	3	-
J1841.0 + 6115	87GB 184000.4 + 611120	280.1472	+61.2353	0.752	Table A2	bcu	UNCL	1	-
J1841.3 + 2909	MG3 J184126 + 2910	280.3405	+29.1614	0.288	Goldoni+ (2021)	bll	BLLAC	0	-
J1841.8 + 3218	RX J1841.7 + 3218	280.4460	+32.3109	0.028	Masetti+ (2013)	bll	BLLAC	0	-
J1842.3 + 6810	S4 1842 + 68	280.6402	+68.1570	0.472	Walsh+ (1984)	fsrq	FSRQ	0	-
J1842.4 + 7613	NVSS J184225 + 761046	280.6068	+76.1807	0.344	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1842.4 − 5840	1RXS J184230.6 − 584202	280.6275	−58.7007	0.421	Marchesini+ (2019)	bll	BLLAC	0	-
J1843.4 − 4835	PKS 1839 − 48	280.8109	−48.6064	0.111	Simpson+ (1993)	rdg	MIS	0	6dF. Classified as FRI by Morganti+ (1993)
J1844.9 + 5709	TXS 1843 + 571	281.2123	+57.1607	0.490	Table A2	bll	BLLAC	1	Massaro+ (2015)
J1846.7 + 7238	RX J1846.1 + 7237	281.5535	+72.6307	0.870	Table A2	bcu	UNCL	1	-
J1848.1 − 4230	PMN J1848 − 4230	282.0258	−42.5075	-	-	bcu	UNCL	3	-
J1848.4 + 3217	B2 1846 + 32A	282.0920	+32.3174	0.798	Sowards-Emmerd+ (2005)	FSRQ	NLS1	0	Shaw+ (2012) reported FWHM(Hβ) = 2000 ± 600 km/s
J1848.5 + 3243	B2 1846 + 32B	282.1432	+32.7334	0.918	Massaro+ (2015)	fsrq	FSRQ	0	-
J1848.5 + 6537	NVSS J184822 + 653702	282.0929	+65.6158	0.364	Piranomonte+ (2007)	bll	BLLAC	0	-
J1848.6 − 2711	PMN J1848 − 2718	282.1979	−27.3050	-	-	bcu	UNCL	3	-
J1848.9 + 4247	RGB J1848 + 427	282.1962	+42.7608	0.221	Table A2	bll	BLLAC	1	Laurent-Muehleisen+ (1998)
J1849.2 + 6705	S4 1849 + 67	282.3170	+67.0949	0.657	Stickel+Kühr (1993)	FSRQ	FSRQ	0	-
J1849.3 − 6447	1RXS J184924.8 − 644933	282.3533	−64.8260	0.243	Table A2	bcu	UNCL	1	-
J1849.4 + 2745	MG2 J184929 + 2748	282.3822	+27.8002	0.738	Table A2	bll	BLLAC	1	Ricci+ (2015)
J1849.4 − 4313	PMN J1849 − 4314	282.3580	−43.2370	-	-	bll	BLLAC	2	Shaw+ (2013)
J1850.5 + 2631	NVSS J185023 + 263151	282.6001	+26.5316	0.2	Table A2	bll	AMB	1	Marchesi+ (2018) took an optical spectrum, which resulted to be featureless, and suggested a BLLAC classification. However, Chuprikov+ (2005) classified the source as microquasar candidate
J1851.5 + 3406	B2 1849 + 34	282.9217	+34.1153	0.876	Table A2	bcu	UNCL	1	Steep radio spectrum, borderline ($\alpha \sim -0.5, -0.6$)
J1852.4 + 4856	S4 1851 + 48	283.1189	+48.9299	1.25	Vermeulen+ (1996)	fsrq	FSRQ	0	-
J1853.8 + 6714	1ES 1853 + 671	283.4671	+67.2319	0.212	Perlman+ (1996)	bll	BLLAC	0	-
J1854.6 − 6007	PMN J1854 − 6009	283.7153	−60.1566	-	-	bll	UNCL	3	-
J1855.8 − 2028	PMN J1855 − 2027	283.9812	−20.4504	-	-	bcu	UNCL	3	-
J1858.1 + 7318	GALEXASC J185820.26 + 731714.3	284.5849	+73.2870	0.471	Table A2	bcu	UNCL	1	-
J1858.3 + 4321	NVSS J185813 + 432452	284.5560	+43.4145	0.136	Peña-Herazo+ (2020)	bll	BLLAC	0	-
J1858.3 − 2511	PMN J1858 − 2511	284.5795	−25.1808	1.29	Table A2	bcu	UNCL	1	-
J1858.7 + 5708	87GB 185759.9 + 570427	284.7229	+57.1360	0.076	de Menezes+ (2020)	fsrq	SEY	0	-
J1901.7 − 5140	PMN J1901 − 5138	285.4542	−51.6522	-	-	bcu	UNCL	3	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1902.9 − 6748	PMN J1903 − 6749	285.7551	−67.8266	0.255	Healey+ (2008)	fsrq	FSRQ	0	Candidate NLS1? Shaw+ (2012) reported FWHM(Hβ) = 2800 ± 2200 km/s
J1903.2 + 5540	TXS 1902 + 556	285.7984	+55.6773	0.476	Table A2	bll	BLLAC	1	Massaro+ (2015)
J1904.1 + 3627	MG2 J190411 + 3627	286.0494	+36.4497	0.0898	Paiano+ (2020)	bll	BLLAC	0	-
J1906.7 + 5419	TXS 1905 + 542	286.7393	+54.3361	-	-	bcu	UNCL	3	Steep radio spectrum ($\alpha \sim -0.99$)
J1909.5 + 3511	TXS 1907 + 350	287.3921	+35.1804	-	-	bcu	UNCL	3	-
J1909.7 − 2140	TXS 1906 − 217	287.4381	−21.6598	-	-	bcu	UNCL	3	-
J1910.0 − 2453	PMN J1910 − 2248	287.5646	−24.7959	0.334	Table A2	bcu	UNCL	1	-
J1911.2 − 2006	PKS B1908 − 201	287.7902	−20.1153	1.12	Halpern+ (2003)	fsrq	FSRQ	0	-
J1911.4 − 1908	PMN J1911 − 1908	287.8739	−19.1402	0.138	Marchesini+ (2019)	bll	BLLAC	0	-
J1912.4 + 3738	TXS 1910 + 375	288.1047	+37.6768	1.10	Henstock+ (1997)	fsrq	FSRQ	0	-
J1912.4 − 1222	TXS 1909 − 124	288.1230	−12.3836	1.01	Table A2	bcu	UNCL	1	-
J1912.7 − 1250	1RXS J191251.7 − 124929	288.2128	−12.8213	-	-	bcu	UNCL	3	-
J1913.0 − 8009	PKS 1903 − 80	288.1667	−80.1683	1.76	Goncalves+ (1998)	fsrq	FSRQ	0	Anguita+ (1979) reported $z \sim 0.5$ from a personal communication by Bolton, which was never confirmed (spectrum never published). The spectrum published by Goncalves displays two prominent lines identified as CIV and CIII]. Caveat: the Bolton's value still appears also in the recent literature.
J1913.4 − 3629	PMN J1913 − 3630	288.3370	−36.5054	0.6	Table A2	bcu	UNCL	1	-
J1913.9 + 4439	2MASS J19140184 + 4438323	288.5078	+44.6423	0.943	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J1916.7 − 1516	PMN J1916 − 1519	289.2188	−15.3167	0.968	Table A2	bcu	UNCL	1	-
J1917.7 − 1921	1H 1914 − 194	289.4367	−19.3588	0.137	Carangelo+ (2003)	bll	BLLAC	0	-
J1917.7 − 6442	PMN J1917 − 6435	289.3919	−64.5955	-	-	bcu	UNCL	3	-
J1917.7 − 6930	PMN J1916 − 6928	289.1512	−69.4759	-	-	bcu	UNCL	3	-
J1918.1 + 3752	1RXS J191810.2 + 375315	289.5402	+37.8870	0.196	Table A2	bcu	UNCL	1	-
J1918.2 − 4111	PMN J1918 − 4111	289.5669	−41.1920	-	-	bll	BLLAC	2	Shaw+ (2013)
J1921.3 − 1231	TXS 1918 − 126	290.3497	−12.5318	0.873	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1921.7 + 5817	WISEA J192158.68 + 581708.5	290.4979	+58.2832	0.430	Table A2	bcu	UNCL	1	-
J1921.8 − 1607	PMN J1921 − 1607	290.4647	−16.1202	-	-	bll	BLLAC	2	Paiano+ (2020)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1922.5 − 7453	1RXS J192244.1 − 745411	290.6759	−74.8991	0.4	Table A2	bcu	UNCL	1	-
J1923.4 − 2503	1RXS J192325.9 − 250228	290.8579	−25.0411	0.506	Table A2	bcu	UNCL	1	-
J1923.5 − 2104	TXS 1920 − 211	290.8841	−21.0759	0.874	Halpern+ (2003)	fsrq	FSRQ	0	There is a typo in the note on this source, where $z = 1.136$ is reported. However, the published spectrum (Figure 3, bottom right panel) and Table 1 reported the correct value
J1924.2 − 1549	TXS 1921 − 159	291.0493	−15.8172	0.6	Table A2	bcu	BLLAC	1	Desai+ (2019)
J1924.3 − 5458	PMN J1924 − 5457	291.0427	−54.9522	0.3	Table A2	bcu	UNCL	1	-
J1924.8 − 2914	PKS B1921 − 293	291.2127	−29.2417	0.352	Wilkes+ (1983)	fsrq	FSRQ	0	6dF
J1925.1 − 1019	PMN J1925 − 1018	291.2633	−10.3034	1.28	Table A2	bll	UNCL	1	-
J1925.1 − 3358	PKS 1921 − 341	291.3209	−34.0171	1.52	Healey+ (2008)	fsrq	FSRQ	0	-
J1925.8 − 2220	TXS 1922 − 224	291.4158	−22.3264	1.35	Table A2	bll	BLLAC	1	Titov+ (2013)
J1926.8 + 6154	87GB 192614.4 + 614823	291.7079	+61.9118	0.112	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1927.5 + 6117	S4 1926 + 61	291.8768	+61.2925	0.59	Table A2	bll	BLLAC	1	Shaw+ (2013)
J1929.4 + 6146	TXS 1928 + 616	292.3962	+61.7748	0.212	Peña-Herazo+ (2020)	bll	BLLAC	0	-
J1931.3 − 1556	PMN J1931 − 1558	292.8236	−15.9647	0.518	Table A2	bcu	UNCL	1	-
J1933.2 − 4539	PKS 1929 − 457	293.1870	−45.6105	0.652	Jauncey+ (1978)	fsrq	FSRQ	0	-
J1934.2 + 6002	GALEXASC J193419.64 + 600139.5	293.5818	+60.0277	1.38	Table A2	bcu	UNCL	1	-
J1934.3 + 6541	TXS 1933 + 655	293.4889	+65.6713	1.69	Healey+ (2008)	fsrq	FSRQ	0	-
J1934.3 − 2419	NVSS J193412 − 241922	293.5532	−24.3223	0.445	Table A2	bcu	BLLAC	1	Rajagopal+ (2021)
J1934.5 + 6139	GB6 J1934 + 6138	293.6695	+61.6449	1.75	Healey+ (2008)	fsrq	FSRQ	0	-
J1936.9 − 4720	PMN J1936 − 4729	294.2338	−47.3306	0.265	Landt+ (2001)	bll	BLLAC	0	-
J1937.0 + 8354	6C B194425 + 834912	294.4152	+83.9414	1.94	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1937.2 − 3958	PKS 1933 − 400	294.3176	−39.9671	0.965	Wilkes+ (1983)	fsrq	CLAGN	0	The first observation by Peterson+Bolton (1972) resulted in a featureless spectrum. Wilkes+ (1983) reported a tentative value from Jauncey+ in preparation, but the published paper (Jauncey+ 1984) did not contain the source. Nonetheless, the redshift was later confirmed by Stickel+Kühr (1996) and Drinkwater+ (1997). The latter also published the spectrum, where two prominent emission lines – identified as MgII and CIII] – are apparent. The 6dF archive has two low-quality ($q = 2$) spectra: the first one, taken on 2022/09/09, displays an emission feature consistent with the MgII line, but it was misidentified with Hβ because of a close artifact; this emission feature is absent in the second spectrum, taken two days later.
J1937.2 − 4217	PKS 1934 − 423	294.3873	−42.2551	-	-	bcu	UNCL	3	Steep radio spectrum ($\alpha \sim -0.91$)
J1939.5 − 1525	PKS 1936 − 15	294.8611	−15.4286	1.66	Jauncey+ (1984)	fsrq	FSRQ	0	-
J1939.8 − 4928	SUMSS J193946 − 429539	294.9420	−49.4273	0.314	Table A2	bcu	UNCL	1	-
J1941.3 − 6210	PKS 1936 − 623	295.3407	−62.1892	0.588	Table A2	bll	BLLAC	1	Shaw+ (2013) took an extremely noisy spectrum, which makes it impossible to say anything, but background noise. Titov+ (2011) published a low S/N spectrum, with a couple of emission features at $\sim$ 4300 Å and $\sim$ 7900 Å, which might be CIV and Mg II (then $z \sim 1.8$)
J1941.7 + 7218	GB6 J1941 + 7221	295.3624	+72.3617	-	-	bcu	UNCL	3	-
J1942.5 − 5827	SUMSS J194224 − 582824	295.6028	−58.4735	0.2	Table A2	bcu	UNCL	1	-
J1942.8 − 3512	1RXS J194306.8 − 351001	295.7779	−35.1686	0.0492	Jones+ (2009)	bll	BLLAC	0	6dF
J1944.4 − 4523	SUMSS J194422 − 452333	296.0933	−45.3924	-	-	bcu	BLLAC	2	Rajagopal+ (2021)
J1944.9 − 2143	1RXS J194455.3 − 214318	296.2299	−21.7220	0.247	Table A2	bcu	BLLAC	1	Rajagopal+ (2021)
J1945.1 − 4007	AT20G J194519 − 400557	296.3310	−40.0990	0.6	Table A2	bcu	UNCL	1	-
J1945.5 − 0153	PMN J1945 − 0153	296.3451	−1.8894	1.04	Table A2	bcu	UNCL	1	-
J1946.0 − 3112	PKS 1942 − 313	296.4974	−31.1940	-	-	bll	BLLAC	2	Shaw+ (2013)
J1949.5 + 7311	CRATES J195016 + 731028	297.5726	+73.1754	-	-	bcu	UNCL	3	-
J1951.8 − 0511	PMN J1951 − 0509	297.9478	−5.1622	1.08	Healey+ (2008)	fsrq	FSRQ	0	-
J1953.0 + 7651	WN B1955.4 + 7642	298.4620	+76.8472	0.765	Table A2	bcu	UNCL	1	-
J1953.0 − 7025	PKS 1947 − 705	298.2110	−70.4153	0.2	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J1954.6 − 1122	TXS 1951 − 115	298.6715	−11.3896	0.683	Shaw+ (2012)	bll	BLLAC	0	Shaw classified it as FSRQ, but the spectrum is quite noisy and shows only a weak emission line identified as MgII. Titov+ (2013) found a featureless spectrum
J1954.9 − 5640	1RXS J195503.1 − 564031	298.7619	−56.6747	0.221	Marchesini+ (2019)	bll	BLLAC	0	-
J1955.1 − 1604	1RXS 195500.6 − 160328	298.7528	−16.0608	0.651	Table A2	bll	BLLAC	1	Peña-Herazo+ (2017)
J1955.4 + 5132	OV 591	298.9281	+51.5302	1.23	Strittmatter+ (1974)	fsrq	FSRQ	0	-
J1956.1 + 0234	2MASS J19562808 + 0234250	299.1170	+2.5737	1.00	Table A2	bcu	UNCL	1	NED has no publication. Simbad has only one star at $\sim 66''$ from the coordinates.
J1957.1 − 3231	PKS 1953 − 325	299.2477	−32.4294	1.24	Jauncey+ (1982)	fsrq	FSRQ	0	Peterson+ (1976) identified the source with a radio-quiet (!) galaxy at $z = 0.018$, but the coordinates are at $\sim 50''$ from the radio position. Wilkes+ (1983) reported no redshift and indicated the Peterson's object as a close galaxy. Jauncey gave the correct identification and redshift. Please note a typo in the specific note on this source in Jauncey's paper: it was written PKS 1953 − 25 instead of PKS 1953 − 325
J1958.0 − 3845	PKS 1954 − 388	299.4992	−38.7518	0.626	Browne+ (1975)	fsrq	FSRQ	0	-
J1958.1 − 0711	NVSS J195801 − 071348	299.5083	−7.2293	-	-	bcu	UNCL	3	-
J1958.3 − 3010	1RXS J195815.6 − 301119	299.5621	−30.1866	0.119	Mauch+Sadler (2007)	bll	BLLAC	0	-
J1959.1 − 4247	PMN J1959 − 4246	299.8053	−42.7688	2.18	Shaw+ (2012)	fsrq	FSRQ	0	-
J1959.7 − 4725	1RXS J195945.8 − 472531	299.9403	−47.4220	-	-	bll	BLLAC	2	Ricci+ (2015)
J2000.0 + 6508	1ES 1959 + 650	299.9994	+65.1485	0.0470	Schachter+ (1993)	bll	BLLAC	0	-
J2000.3 − 2930	PMN J2000 − 2931	300.0707	−29.5073	1.37	Table A2	fsrq	UNCL	1	The BZCAT by Massaro+ (2009) classified it as FSRQ with $z = 0.652$, but its origin is unknown. The fifth edition of BZCAT does not contain the source anymore.
J2000.6 − 1328	TXS 1957 − 135	300.1756	−13.4260	0.222	Healey+ (2008)	fsrq	FSRQ	0	-
J2000.9 − 1748	PKS 1958 − 179	300.2379	−17.8160	0.652	Browne+ (1975)	fsrq	FSRQ	0	-
J2001.5 − 0818	PMN J2001 − 0820	300.4177	−8.3367	0.417	Table A2	bcu	UNCL	1	-
J2001.7 + 7040	TXS 2001 + 705	300.3915	+70.6738	0.869	Table A2	bll	BLLAC	1	Shaw+ (2013). The 2FGL catalog (Ackermann+ 2011) reported $z = 0.254$, referring to the Shaw's paper yet to be published. However, the published Shaw's paper reported no redshift measurement
J2001.9 − 5737	1RXS J200205.7 − 573644	300.5174	−57.6126	0.173	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2002.4 − 7119	SUMSS J200227 − 711940	300.6130	−71.3280	-	-	bcu	BLLAC	2	Rajagopal+ (2021)
J2002.6 + 6302	1RXS J200245.4 + 630226	300.6891	+63.0426	0.787	Table A2	bll	BLLAC	1	Marchesini+ (2016)
J2005.1 + 7003	1RXS J200504.0 + 700445	301.2751	+70.0776	2.32	Table A2	bll	UNCL	1	-
J2005.2 − 1822	PKS 2002 − 185	301.3221	−18.3676	0.868	Hunstead+ (1978)	fsrq	FSRQ	0	-
J2005.5 + 7752	S5 2007 + 77	301.3792	+77.8787	0.342	Stickel+ (1989)	bll	BLLAC	0	Gopal-Krishna+Wiita (2000) reported a FRI-FRII hybrid radio morphology. Flat radio spectrum
J2005.8 + 6424	87GB 200541.3 + 641601	301.5737	+64.4126	1.57	Henstock+ (1997)	fsrq	FSRQ	0	-
J2005.9 − 2309	TXS 2002 − 233	301.4858	−23.1742	0.833	Wallace+ (2002)	fsrq	FSRQ	0	-
J2007.2 + 6607	TXS 2007 + 659	301.8699	+66.1229	1.33	Vermeulen+ (1995)	fsrq	FSRQ	0	-
J2007.3 − 7728	PKS 2000 − 776	301.7769	−77.5117	-	-	bcu	UNCL	3	-
J2007.9 − 4432	PKS 2004 − 447	301.9799	−44.5790	0.240	Drinkwater+ (1997)	nlsy1	MIS	0	Classified as NLS1 by Oshlack+ (2001). Classified as MIS/CSS by Berton+ (2021)
J2009.4 − 4849	PKS 2005 − 489	302.3558	−48.8316	0.0710	Falomo+ (1987)	BLL	BLLAC	0	-
J2010.0 + 0726	TXS 2007 + 073	302.4813	+7.4538	0.762	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J2010.0 + 7229	4C +72.28	302.4679	+72.4887	0.950	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2011.6 − 1546	PKS 2008 − 159	302.8155	−15.7778	1.18	Peterson+ (1979)	fsrq	FSRQ	0	-
J2012.2 − 1646	PMN J2012 − 1646	303.1257	−16.7807	1.25	Table A2	bll	UNCL	1	-
J2013.0 − 3717	AT20G J201248 − 371941	303.2019	−37.3282	0.6	Table A2	bcu	UNCL	1	-
J2014.3 − 0047	PMN J2014 − 0047	303.6193	−0.7897	0.230	Shaw+ (2013)	bll	BLLAC	0	-
J2014.5 + 0648	NVSS J201431 + 064849	303.6295	+6.8145	0.341	Massaro+ (2015)	bll	BLLAC	0	-
J2015.0 + 1621	4C +16.67	303.7659	+16.3743	0.243	Table A2	bcu	UNCL	1	-
J2015.2 − 0137	PKS 2012 − 017	303.8132	−1.6257	0.853	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2015.3 − 1432	NVSS J201525 − 143202	303.8543	−14.5345	0.3	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J2015.4 + 6556	S4 2015 + 65	303.9807	+65.9146	2.85	Stickel+Kühr (1993)	fsrq	FSRQ	0	-
J2016.3 − 0903	PMN J2016 − 0903	304.1002	−9.0593	-	-	bll	BLLAC	2	Shaw+ (2013). The 2FGL catalog (Ackermann+ 2011) reported $z = 0.367$, referring to the Shaw's paper yet to be published. However, the published Shaw's paper reported no redshift measurement
J2016.3 − 2331	1RXS J201604.8 − 233049	304.0200	−23.5136	-	-	bcu	UNCL	3	-
J2017.5 − 3753	PKS 2014 − 380	304.3690	−37.8961	0.598	Hook+ (2003)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2017.5 − 4113	SUMSS J201729 − 411516	304.3748	−41.2544	0.242	Table A2	bcu	BLLAC	1	Kollatschny+ (2008)
J2021.9 + 0629	PMN J2021 + 0628	305.4811	+6.4871	0.473	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016). Massaro+ (2015) proposed the association with NVSS J202127 + 063320 (FSRQ, $z = 0.271$), which is $\sim 8'$ distant from the 4FGL counterpart
J2022.0 − 7224	1RXS J202204.8 − 722538	305.5200	−72.4274	0.3	Table A2	bcu	UNCL	1	-
J2022.3 − 4513	PMN J2022 − 4513	305.6101	−45.2249	0.085	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2022.5 + 7612	S5 2023 + 760	305.6482	+76.1906	0.594	Shaw+ (2013)	bll	BLLAC	0	-
J2023.6 − 0123	PMN J2023 − 0123	305.8867	−1.3950	0.625	Table A2	bcu	BLLAC	1	Titov+ (2013)
J2023.6 − 1139	PMN J2023 − 1140	305.9029	−11.6662	0.767	Table A2	fsrq	BLLAC	1	Shaw+ (2013). The 2FGL catalog (Ackermann+ 2011) reported $z = 0.698$, referring to the Shaw's paper yet to be published. However, the published Shaw's paper reported no redshift measurement
J2023.8 − 4828	PMN J2023 − 4826	305.9109	−48.4479	0.164	Table A2	bll	UNCL	1	-
J2024.4 − 0847	1RXS J202428.9 − 084810	306.1224	−8.8012	1.03	Table A2	bll	BLLAC	1	Marchesi+ (2018)
J2024.6 − 3252	PKS 2021 − 330	306.1482	−32.8933	1.47	Browne+ (1975)	fsrq	FSRQ	0	-
J2024.8 − 6459	PMN J2024 − 6458	306.1932	−64.9762	0.624	Table A2	bcu	UNCL	1	-
J2025.2 + 0317	PKS 2022 − 031	306.2901	+3.2790	2.21	Véron-Cetty+Véron (1993)	fsrq	FSRQ	0	-
J2025.6 − 0735	PKS 2023 − 07	306.4194	−7.5980	1.39	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J2026.0 − 2845	PMN J2025 − 2845	306.4734	−28.7635	0.884	Shaw+ (2012)	fsrq	CLAGN	0	Shaw found prominent emission lines, while Titov+ (2013) published an almost featureless spectrum and classified it as BLLAC (although there is a clear emission line at ~ 7000 Å consistent with [OII]). Titov observed in 2011, while Shaw did not publish the dates.
J2026.1 + 7645	2MASS J20263126 + 7644487	306.6283	+76.7467	0.258	Table A2	bcu	UNCL	1	-
J2029.1 − 1839	NVSS J202900 − 183709	307.2512	−18.6194	0.760	Table A2	bcu	UNCL	1	-
J2030.2 − 0620	TXS 2027 − 065	307.5631	−6.3708	0.671	Shaw+ (2012)	fsrq	SEY	0	Shaw also classified it as LINER, but the spectrum is quite noisy. To be confirmed with better S/N. Flat radio spectrum
J2030.4 − 0502	TXS 2027 − 052	307.5935	−5.0535	0.543	Healey+ (2008)	fsrq	FSRQ	0	-
J2030.5 − 1439	NVSS J203028 − 143918	307.6163	−14.6548	0.610	Peña-Herazo+ (2017)	fsrq	SEY	0	Likely a LINER
J2030.8 − 6959	PKS 2024 − 701	307.4740	−69.9531	-	-	bcu	UNCL	3	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2030.9 + 1935	RX J2030.8 + 1935	307.7381	+19.6036	0.668	Massaro+ (2015)	bll	BLLAC	0	-
J2031.1 − 2615	TXS 2028 − 264	307.7679	−26.2588	0.687	Table A2	bcu	UNCL	1	-
J2031.2 − 4121	SUMSS J203056 − 411906	307.7357	−41.3185	0.456	Table A2	bcu	UNCL	1	-
J2031.8 + 1619	MG1 J203139 + 1622	307.9254	+16.3687	0.149	Table A2	bcu	UNCL	1	-
J2032.0 + 1219	PKS 2029 + 121	307.9791	+12.3282	1.22	Stickel+Kühr (1993)	bll	FSRQ	0	Stickel+Kühr classified it as BLLAC, but Rector+Stocke (2001) found a strong CIV line at $\sim$ 3500 Å ($EW \sim 35$ Å), thus classifying it as FSRQ. The CIV line was not observed in the Stickel+Kühr spectrum, because its blue wavelength threshold was at $\sim$ 4000 Å, so it is likely not a CLAGN.
J2033.7 + 6308	87GB 203249.5 + 625814	308.4156	+63.1445	0.791	Table A2	bcu	UNCL	1	-
J2034.6 + 1154	TXS 2032 + 117	308.6546	+11.9087	0.607	Sowards-Emmerd+ (2003)	fsrq	FSRQ	0	-
J2034.8 − 4200	2MASS J20345108 − 4200386	308.7129	−42.0107	0.213	Table A2	bll	BLLAC	1	Desai+ (2019). However, in the published spectrum there are some weak emission features at $\sim$ 5100 and $\sim$ 6750 Å, which might be identified with [OII] and [OIII], respectively, at $z \sim 0.348$
J2035.4 + 1056	PKS 2032 + 107	308.8431	+10.9352	0.601	Antonucci+ (1987)	fsrq	FSRQ	0	Candidate NLS1: Shaw+ (2012) measured FWHM(Hβ)= 2300 $\pm$ 1900 km/s
J2036.4 + 6553	87GB 203539.4 + 654245	309.0839	+65.8874	1.07	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J2036.9 − 3329	1RXS J203650.9 − 332817	309.2062	−33.4752	0.237	Álvarez Crespo+ (2016)	bll	BLLAC	0	-
J2037.9 − 0504	PMN J2037 − 0508	309.4130	−5.1394	0.695	Table A2	bcu	UNCL	1	-
J2039.0 − 1046	TXS 2036 − 109	309.7530	−10.7783	0.569	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2039.3 + 2150	TXS 2037 + 216	309.8950	+21.8694	1.98	Table A2	bcu	UNCL	1	-
J2040.0 − 5737	PKS 2036 − 577	310.0046	−57.5860	0.802	Table A2	bcu	UNCL	1	-
J2040.1 − 4621	2MASS J20400660 − 4620180	310.0276	−46.3383	0.193	Table A2	bcu	UNCL	1	-
J2040.2 − 2506	PKS 2037 − 253	310.0366	−25.1296	1.57	Wilkes (1986)	fsrq	FSRQ	0	-
J2040.2 − 7115	PKS 2035 − 714	310.0345	−71.2500	0.162	Guzzo+ (2009)	bll	AMB	0	The featureless 6dF spectrum, with just the calcium break, and the gamma-ray photon index quite hard ($\Gamma \sim 1.7$) suggest a BLLAC classification; but the radio spectrum is steep ($\alpha \sim -0.76$), suggesting a MIS.
J2040.5 − 1705	TXS 2037 − 172	310.1156	−17.1175	1.89	Table A2	bcu	UNCL	1	-
J2041.8 − 7319	SUMSS J204201 − 731911	310.5082	−73.3205	0.3	Table A2	bll	BLLAC	1	Desai+ (2019)
J2041.9 − 3735	NVSS J204150 − 373341	310.4593	−37.5611	0.0986	Guzzo+ (2009)	bll	BLLAC	0	6dF

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2042.1 + 2427	MG2 J204208 + 2426	310.5252	+24.4479	0.104	Shaw+ (2013)	bll	BLLAC	0	-
J2042.7 − 0155	PMN J2042 − 0148	310.7029	−1.8194	0.888	Table A2	bcu	UNCL	1	-
J2042.7 − 5415	WISEA J204241.98 − 540925.3	310.6785	−54.1559	1.52	Table A2	bcu	UNCL	1	-
J2043.7 + 0000	2MASS J20434215 + 0001193	310.9257	+0.0219	0.337	Table A2	bll	UNCL	1	Peña-Herazo+ (2020) reported a different counterpart (BLLAC, featureless), which is $\sim 2'$ distant
J2044.0 + 1036	NVSS J204351 + 103406	310.9652	+10.5685	0.259	Table A2	bcu	UNCL	1	-
J2045.1 − 2346	NVSS J204457 − 234643	311.2405	−23.7790	0.655	Table A2	bcu	UNCL	1	-
J2046.6 − 1012	PMN J2046 − 1010	311.7264	−10.1778	0.440	Table A2	bll	BLLAC	1	Marchesini+ (2019)
J2046.8 − 4258	2MASS J20464397 − 4257134	311.6840	−42.9535	0.461	Table A2	bll	BLLAC	1	Peña-Herazo+ (2020)
J2047.1 − 7400	PKS 2041 − 741	311.7382	−74.0011	0.526	Jones+ (2009)	fsrq	FSRQ	0	6dF
J2047.9 − 3122	NVSS J204806 − 312016	312.0258	−31.3378	0.265	Table A2	bcu	UNCL	1	-
J2048.6 − 6804	PKS 2043 − 682	312.1000	−68.0811	0.166	Table A2	bll	UNCL	1	-
J2049.0 + 1647	NVSS J204902 + 164727	312.2604	+16.7908	0.686	Table A2	bcu	UNCL	1	-
J2049.7 − 0036	1RXS J204921.6 − 003930	312.3406	−0.6574	0.257	Piranomonte+ (2007)	bll	BLLAC	0	SDSS
J2049.9 + 1002	PKS 2047 + 098	312.4411	+10.0540	0.226	Klindt+ (2017)	bll	BLLAC	0	-
J2049.9 − 2453	CRATES J205011.52 − 244811.6	312.5480	−24.8033	0.331	Table A2	bcu	UNCL	1	-
J2050.0 + 0408	PKS 2047 + 039	312.5260	+4.1302	0.434	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2050.4 − 2627	PMN J2050 − 2628	312.6029	−26.4717	1.63	Healey+ (2008)	fsrq	FSRQ	0	-
J2052.2 − 5533	PMN J2052 − 5533	313.0570	−55.5528	1.50	Titov+ (2017)	bcu	FSRQ	0	-
J2052.5 + 0810	RX J2052.7 + 0810	313.1779	+8.1772	-	-	bll	BLLAC	2	Piranomonte+ (2007)
J2054.8 + 0015	RGB J2054 + 002	313.7369	+0.2605	0.151	SDSS	bll	BLLAC	0	-
J2055.4 − 0020	1RXS J205528.2 − 002123	313.8676	−0.3548	0.440	Shaw+ (2013)	bll	BLLAC	0	SDSS
J2055.4 − 0504	NVSS J205523 − 050618	313.8474	−5.1053	0.342	SDSS	bll	BLLAC	0	-
J2056.2 − 4714	PKS 2052 − 47	314.0682	−47.2466	1.49	Jauncey+ (1984)	fsrq	FSRQ	0	Additionally, independently measured by Murdoch+ (1984)
J2056.4 − 4904	SUMSS J205613 − 490415	314.0566	−49.0706	0.446	Table A2	bcu	UNCL	1	-
J2056.5 − 0202	PMN J2056 − 0205	314.1590	−2.0858	1.12	Table A2	bcu	UNCL	1	-
J2056.7 − 3209	PKS 2053 − 323	314.1045	−32.1466	-	-	bll	BLLAC	2	Titov+ (2011)
J2057.4 − 0723	PMN J2057 − 0719	314.3377	−7.3277	1.15	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2058.8 − 1442	TXS 2056 − 149	314.6948	−14.7181	0.0778	Jones+ (2009)	bcu	BLLAC	0	6dF
J2100.0 + 2103	MG3 J210007 + 2058	315.0211	+20.9890	0.650	Table A2	bcu	AMB	1	There are two tentative spectroscopic values, but no spectrum published, so that it is not possible to understand if one is correct. Falco+ (1998) reported $z = 0.19$ on the basis of an absorption feature identified as Ca H+K break. Muñoz+ (2003) suggested $z = 0.361$ on the basis of some emission features identified as Hβ and Hδ
J2101.3 + 0912	RX J2101.3 + 0913	315.3495	+9.2236	0.204	Table A2	bcu	UNCL	1	-
J2101.4 − 2935	PKS 2058 − 297	315.2569	−29.5577	1.49	Drinkwater+ (1997)	fsrq	FSRQ	0	Wilkes+ (1983) reported a tentative $z \sim 0.7$ from unpublished data; never confirmed, no spectrum published.
J2103.4 − 7816	PKS 2059 − 78	316.4375	−78.4264	0.892	Table A2	bcu	BLLAC	1	Titov+ (2011)
J2103.7 − 1112	1RXS J210346.8 − 111335	315.9450	−11.2264	-	-	bcu	UNCL	3	-
J2103.8 − 6233	PMN J2103 − 6232	315.9100	−62.5405	0.175	Table A2	bll	BLLAC	1	Marchesini+ (2019)
J2104.0 − 3546	NVSS J210353 − 354620	315.9706	−35.7723	0.5	Table A2	bcu	UNCL	1	-
J2104.3 − 0212	NVSS J210421 − 021239	316.0914	−2.2108	1.38	Table A2	bll	BLLAC	1	6dF
J2104.7 + 0108	PKS B2102 + 009	316.1788	+1.1363	0.672	Table A2	bcu	UNCL	1	-
J2105.2 − 5143	PMN J2105 − 5145	316.3536	−51.7639	0.449	Table A2	bcu	UNCL	1	-
J2106.9 + 2455	MG3 J210642 + 2501	316.6657	+25.0160	0.644	Table A2	bcu	UNCL	1	-
J2107.6 − 4148	PMN J2107 − 4145	316.8466	−41.7583	0.694	Table A2	bcu	UNCL	1	-
J2108.2 − 2454	AT20G J210812 − 245233	317.0513	−24.8759	1.17	Table A2	bcu	UNCL	1	-
J2108.3 − 4824	PMN J2107 − 4827	316.9354	−48.4675	0.534	Table A2	bcu	BLLAC	1	Marchesini+ (2019)
J2108.5 + 1434	OX 110	317.1710	+14.5075	2.02	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J2108.7 − 0250	TXS 2106 − 030	317.1864	−2.8428	0.149	Shaw+ (2013)	bll	BLLAC	0	6dF
J2108.9 − 6638	PKS 2104 − 668	317.2159	−66.6230	-	-	bll	BLLAC	2	Titov+ (2013)
J2109.6 + 0440	GALEXASC J210940.09 + 044000.8	317.4172	+4.6668	0.276	Table A2	bll	BLLAC	1	SDSS inconclusive. Perhaps, $z \sim 0.9$ if the absorption feature at $\sim$ 7500 Å is the calcium break and the weak emission feature at $\sim$ 5400 Å is MgII
J2109.8 − 8618	2MASS J21101113 − 8618473	317.5466	−86.3132	0.395	Table A2	bcu	UNCL	1	-
J2110.2 − 1021c	PKS 2107 − 105	317.5041	−10.3493	2.50	Titov+ (2011)	fsrq	FSRQ	0	-
J2110.3 + 0808	PMN J2110 + 0810	317.5403	+8.1654	1.59	Shaw+ (2012)	fsrq	FSRQ	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2112.7 + 0819	1RXS J211242.5 + 081831	318.1792	+8.3098	0.393	Table A2	bll	BLLAC	1	SDSS
J2114.7 + 3130	B2 2112 + 31	318.7102	+31.5059	0.950	Table A2	bcu	UNCL	1	-
J2114.8 + 2026	TXS 2112 + 202	318.7204	+20.4408	0.211	Table A2	agn	UNCL	1	-
J2114.8 + 2831	B2 2112 + 28B	318.7431	+28.5492	2.35	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-
J2115.4 + 2932	B2 2113 + 29	318.8726	+29.5607	1.51	Stickel+ (1993)	fsrq	FSRQ	0	-
J2115.6 − 4938	MRSS 235 − 024179	318.9371	−49.6519	0.285	Table A2	bcu	UNCL	1	-
J2115.8 + 6753	NVSS J211618 + 675324	319.0741	+67.8900	0.408	Table A2	bcu	UNCL	1	-
J2115.9 − 0113	NVSS J211603 − 010828	319.0135	−1.1412	0.305	SDSS	bll	BLLAC	0	-
J2116.2 + 3339	B2 2114 + 33	319.0605	+33.6557	-	-	bll	BLLAC	2	Shaw+ (2013) suggested a tentative $z \sim 1.596$ on the basis of a very weak emission feature at $\sim$ 4000 Å identified as CIV. Paiano+ (2017) found again a featureless spectrum, but cannot confirm Shaw's weak feature, because her spectrum starts at $\sim$ 4250 Å.
J2116.3 + 1015	4C +10.65	318.9601	+10.2590	1.01	Table A2	bcu	UNCL	1	Steep radio spectrum ($\alpha \sim -0.8$), double lobe van Velzen+ (2015), likely a MIS
J2117.8 − 1521	TXS 2115 − 155	319.4648	−15.3783	2.3	Table A2	bcu	UNCL	1	-
J2117.8 − 3243	NVSS J211754 − 324326	319.4788	−32.7245	0.215	Jones+ (2009)	bll	BLLAC	0	6dF
J2118.0 + 0019	PMN J2118 + 0013	319.5725	+0.2213	0.463	SDSS	fsrq	SEY	0	There are some measurements of the FEHM(Hβ) suggesting it might be a NLS1: Shaw+ (2012), 2300 $\pm$ 600 km/s; Rakshit+ (2017), 1944 $\pm$ 111 km/s; Rakshit+ (2020), 2080 $\pm$ 149 km/s. However, the SDSS spectrum shows a broadening of the Hβ profile, indicating a classification as intermediate Seyfert, confirmed by Massaro+ (2014), although with no explanation
J2118.8 − 0723c	TXS 2116 − 077	319.7207	−7.5410	0.260	SDSS	nlsy1	SEY	0	Classified as NLS1 by Rakshit+ (2017) and Yang+ (2018), it has been reclassified as intermediate Seyfert by Järvelä+ (2020). The radio spectrum is steep at frequencies smaller than 1.4 GHz, but it becomes flat at higher frequencies (Yang+ 2018). Ongoing merging with a non-jetted Seyfert 2 galaxy (Järvelä+ 2020, Paliya+ 2020)
J2119.0 − 3317	PMN J2118 − 3316	319.7219	−33.2808	-	-	bcu	UNCL	3	-
J2119.6 − 1105	PKS 2116 − 11	319.9162	−11.1041	1.84	Hook+ (2003)	fsrq	FSRQ	0	-
J2120.6 − 1254	NVSS J212035 − 125443	320.1486	−12.9114	0.582	Shaw+ (2012)	bcu	SEY	0	Shaw classified it as LINER, but it might also be a Seyfert 2

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2120.6 − 6114	PMN J2121 − 6111	320.2670	−61.1902	1.02	Titov+ (2011)	fsrq	FSRQ	0	-
J2121.0 + 1901	OX 131	320.2525	+19.0245	2.18	Shaw+ (2012)	fsrq	FSRQ	0	-
J2123.6 + 0535	OX 036	320.9355	+5.5895	1.94	Steidel+Sargent (1991)	fsrq	FSRQ	0	-
J2123.8 − 3148	PMN J2123 − 3155	320.9367	−31.9338	-	-	bcu	UNCL	3	-
J2126.1 − 3922	PMN J2126 − 3921	321.6050	−39.3562	0.5	Table A2	bll	BLLAC	1	Marchesini+ (2019)
J2126.3 − 4605	PKS 2123 − 463	321.6279	−46.0966	0.612	Table A2	FSRQ	UNCL	1	Savage+Wright (1981) suggested either $z \sim 0.48$ or $z \sim 1.67$, with a preference for the latter. Jackson+ (2002) found that almost all the redshift estimates of that paper were wrong, and rejected the proposed value.
J2126.5 + 1842	87GB 212407.5 + 182753	321.6186	+18.6837	0.851	Table A2	bcu	UNCL	1	-
J2127.6 − 5959	NGC 7059	321.8704	−60.0138	-	-	bcu	AMB	3	Warning! 4FGL proposed NGC 7059 as counterpart, a starforming SAB galaxy at $z = 0.00578$, but the coordinates in the columns `RA_Counterpart` and `DEC_Counterpart` are not consistent with its center (difference $\sim 1'$). See the discussion in the Section 3.
J2127.7 + 3612	B2 2125 + 35	321.9293	+36.2183	0.590	Table A2	bll	BLLAC	1	Massaro+ (2015)
J2130.2 − 7320	PMN J2130 − 7325	322.6609	−73.4178	0.0565	Jones+ (2009)	bll	BLLAC	0	6dF
J2130.4 − 4241	SUMSS J213017 − 424319	322.5720	−42.7220	0.148	Table A2	bcu	UNCL	1	-
J2130.8 − 6623	SUMSS J213038 − 662356	322.6613	−66.3990	-	-	bcu	UNCL	3	-
J2131.0 − 2746	RBS 1751	322.7635	−27.7828	-	-	bll	BLLAC	2	Goldoni+ (2021). 6dF
J2131.5 − 0916	RBS 1752	322.8976	−9.2566	0.449	Piranomonte+ (2007)	bll	BLLAC	0	Uncertain redshift, but somehow confirmed with caveat by Sbarufatti+ (2009)
J2131.7 − 2515	RBS 1755	322.9648	−25.2663	-	-	bll	BLLAC	2	Piranomonte+ (2007)
J2132.0 − 5418	PMN J2132 − 5420	323.0346	−54.3435	0.704	Table A2	bcu	UNCL	1	-
J2133.0 + 2610	NVSS J213252 + 261143	323.2210	+26.1955	1.11	Table A2	bcu	UNCL	1	-
J2133.1 + 2529c	87GB 213100.1 + 251534	323.3098	+25.4831	0.294	Massaro+ (2015)	bll	BLLAC	0	-
J2133.6 + 1439	MG1 J213339 + 1443	323.4058	+14.7296	0.676	Table A2	bcu	UNCL	1	-
J2133.9 + 6646	NVSS J213349 + 664706	323.4548	+66.7846	0.699	Table A2	bll	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2134.2 − 0154	PKS 2131 − 021	323.5430	−1.8881	1.285	Drinkwater+ (1997)	bll	CLAGN	0	The first uncertain estimate ($z = 0.557$) was published by Wills+Lynds (1978), but it was not confirmed by subsequent observations. Baldwin+ (1989) reported the detection of two weak narrow emission lines, but they cannot identify them. Stickel+ (1993) and Verón-Cetty+Verón (1993) reported featureless spectra. Drinkwater+ (1997) confirmed the lines detected by Baldwin+ (1989), with the addition of one more, which was identified as CIV and allowed to measure $z = 1.285$. This result was definitely confirmed by Rector+Stocke (2001), who also reported equivalent width stronger than 5 Å, thus suggesting a CLAGN classification. The automatic pipeline of SDSS failed to find the redshift, likely because of the strong artifact at $\sim$ 5600 Å: [OII] is misidentified as Hα, MgII as Hβ, and it missed the evident line at $\sim$ 4300 Å (which is CIII]).
J2134.3 − 6511	PKS 2130 − 654	323.5551	−65.2270	0.632	Table A2	bcu	UNCL	1	-
J2134.5 − 2130	NVSS J213430 − 213032	323.6257	−21.5091	0.501	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J2135.3 − 5006	PMN J2135 − 5006	323.8340	−50.1144	2.18	Shaw+ (2012)	fsrq	FSRQ	0	-
J2136.2 + 0032	OX 057	324.1608	+0.6984	1.94	Shimmins+ (1968)	fsrq	FSRQ	0	SDSS
J2136.2 − 0642	TXS 2133 − 069	324.0930	−6.7311	0.941	SDSS	bcu	FSRQ	0	-
J2138.3 + 3556	MG3 J213809 + 3553	324.5281	+35.9082	0.629	Table A2	bcu	UNCL	1	-
J2138.8 − 2055	1RXS J213852.9 − 205354	324.7198	−20.8966	0.290	Piranomonte+ (2007)	bll	BLLAC	0	-
J2139.2 − 2214	PMN J2139 − 2213	324.8113	−22.2196	1.44	Table A2	bcu	UNCL	1	-
J2139.4 − 4235	MH 2136 − 428	324.8507	−42.5890	0.468	Table A2	bll	BLLAC	1	Landoni+ (2014). Monroe+ (2016) reported $z = 0.506$, but the published spectrum does not show any evident feature supporting that claim
J2139.9 + 3910	B2 2138 + 38	325.0706	+39.1958	1.31	Britzen+ (2007)	bcu	UNCL	0	Britzen reported the redshift from a personal communication by R. Vermeulen, but no classification is given. Henstock+ (1997) observed it with 300 s exposure at the Isaac Newton Telescope, but reported no detection. No other observation is available.
J2140.5 − 6731	PMN J2139 − 6732	324.8050	−67.5355	2.01	Shaw+ (2012)	bcu	FSRQ	0	-
J2141.7 − 6410	PMN J2141 − 6411	325.4435	−64.1874	0.959	Titov+ (2017)	bcu	FSRQ	0	-
J2141.8 − 3727	PKS 2138 − 377	325.4685	−37.4869	0.423	Brinkmann+ (1994)	fsrq	FSRQ	0	6dF

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2142.4 + 3659	2MASS J21422658 + 3659481	325.6104	+36.9971	0.156	Table A2	bcu	UNCL	1	-
J2142.5 − 2552	PMN J2142 − 2551	325.5664	−25.8574	1.37	Table A2	bcu	UNCL	1	-
J2142.7 − 0437	PKS 2140 − 048	325.6538	−4.6288	0.344	Wills+Wills (1976)	fsrq	FSRQ	0	-
J2142.8 + 1958	NVSS J214247 + 195810	325.6979	+19.9697	0.760	Table A2	bcu	UNCL	1	-
J2143.0 − 5501	CTS 0561	325.4346	−55.1583	1.92	Maza+ (1995)	bcu	FSRQ	0	-
J2143.1 − 3929	PMN J2143 − 3929	325.7619	−39.4903	0.429	Shaw+ (2013)	bll	BLLAC	0	-
J2143.5 + 1743	OX 169	325.8981	+17.7302	0.211	Wills+Wills (1974)	fsrq	FSRQ	0	Extended optical structures due to a recent merger (Hutchings+Neff 1992; McLure+ 1999), double-peaked Hβ (Marziani+ 1996)
J2143.9 + 3337	MG3 J214351 + 3337	325.9589	+33.6197	-	-	bcu	UNCL	3	-
J2144.2 + 3132	MG3 J214415 + 3132	326.0634	+31.5609	0.623	Table A2	bll	BLLAC	1	Marchesini+ (2019)
J2144.3 − 7802	PKS 2141 − 781	326.6253	−77.9319	0.334	Healey+ (2008)	fsrq	FSRQ	0	-
J2144.8 − 1817	NVSS J214442 − 181801	326.1754	−18.3001	0.159	Table A2	bcu	UNCL	1	-
J2145.0 − 3356	PMN J2145 − 3357	326.2547	−33.9546	1.36	Healey+ (2008)	fsrq	FSRQ	0	-
J2145.5 + 1006	87GB 214302.1 + 095227	326.3758	+10.1015	0.499	Table A2	bll	BLLAC	1	SDSS
J2145.7 + 0718	MS 2143.4 + 0704	326.4679	+7.3242	0.237	Stocke+ (1991)	bll	BLLAC	0	-
J2146.4 − 1528	PKS 2143 − 156	326.5957	−15.4289	0.698	Peterson+ (1976)	fsrq	FSRQ	0	Oshlack+ (2002) reported FWHM(Hβ) $\sim$ 836 km/s on the basis of the spectrum taken by Drinkwater+ (1997). However, the published spectrum does not seem to match the proposed measurement: it displays evident Hβ (with a broadening toward the continuum) and [OIII]λ4958, and a rather weak/almost absent [OIII]λ5007. The comparison of Hβ with the nearby [OIII]λ4958 clearly shows the different profiles. Moreover, such a narrow Hβ would point to an obscured object (Seyfert 2?), but the radio spectrum is flat. Jackson+Browne (1991a, 1991b) obtained a better spectrum for the Hβ-[OIII] complex and measured FWHM(Hβ) $\sim$ 76–66 Å (rest frame), corresponding to a very broad component, typical of FSRQs.
J2146.5 − 1344	NVSS J214637 − 134359	326.6540	−13.7335	0.481	Table A2	bll	BLLAC	1	Masetti+ (2013)
J2146.8 + 0425	MG1 J214653 + 0427	326.7300	+4.4571	1.18	Table A2	bcu	UNCL	1	-
J2147.1 + 0931	PKS 2144 + 092	326.7923	+9.4963	1.11	White+ (1988)	FSRQ	FSRQ	0	Wills+Wills (1976) suggested a tentative $z \sim 1.609$ never confirmed

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2147.3 − 7536	PKS 2142 − 75	326.8030	−75.6037	1.14	Jauncey+ (1978)	FSRQ	FSRQ	0	-
J2148.0 − 0733	SDSS J214807.08 − 073347.0	327.0294	−7.5630	0.332	SDSS	bll	AMB	0	The SDSS spectrum is quite noisy with a strong gap in the range ∼ 8000–8400 Å. The complex around ∼ 9000 Å (quite noisy) has been identified with Hα-[NII], but if it is Hβ-[OIII], then $z \sim 0.78$
J2148.6 + 0652	PKS 2145 + 06	327.0227	+6.9607	0.999	Wills+Lynds (1978)	fsrq	FSRQ	0	Kinman+Burbidge (1967) suggested a tentative $z \sim 0.367$, challenged by Oke+ (1970), who in turn suggested $z \sim 0.99$. LAMOST
J2148.9 − 0121	PKS 2146 − 01	327.1808	−1.3773	0.203	Drinkwater+ (2010)	bcu	SEY	0	SDSS
J2149.6 + 0323	PKS B2147 + 031	327.4245	+3.3810	0.363	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2149.7 + 1917	TXS 2147 + 191	327.4469	+19.3462	1.35	Table A2	bcu	UNCL	1	-
J2150.1 − 1410	TXS 2147 − 144	327.5647	−14.1805	0.229	Fischer+ (1998)	bll	BLLAC	0	-
J2150.7 − 1750	MRSS 600 − 040574	327.6942	−17.8317	0.186	Paiano+ (2019)	bll	BLLAC	0	-
J2150.7 − 2810	PMN J2150 − 2812	327.7212	−28.2116	0.865	Croom+ (2001)	fsrq	FSRQ	0	6dF
J2150.8 + 1118	NVSS J215051 + 111915	327.7158	+11.3211	0.326	Table A2	bll	BLLAC	1	SDSS
J2151.7 − 2749	PMN J2151 − 2742	327.8415	−27.7065	1.48	Croom+ (2004)	fsrq	FSRQ	0	-
J2151.8 − 3027	PKS 2149 − 306	327.9813	−30.4649	2.35	Wilkes+ (1983)	fsrq	FSRQ	0	Wilkes cites a paper by Jauncey in preparation, but no publication was found. The redshift was later confirmed by Wilkes (1986) and many other authors
J2152.0 − 1205	RBS 1791	328.0588	−12.0949	0.641	Table A2	bll	BLLAC	1	6dF
J2152.5 + 1737	S3 2150 + 17	328.1034	+17.5772	0.874	Shaw+ (2013)	bll	BLLAC	0	-
J2153.1 − 0041	RBS 1792	328.2723	−0.7085	0.342	SDSS	bll	BLLAC	0	-
J2153.8 − 1137	PMN J2153 − 1136	328.4593	−11.6039	0.703	Table A2	fsrq	UNCL	1	Massaro+ (2009) gives FSRQ classification and $z \sim 1.582$ of unknown origin.
J2156.0 + 1818	RX J2156.0 + 1818	329.0068	+18.3103	1.36	Table A2	bll	BLLAC	1	Álvarez Crespo+ (2016)
J2156.0 − 6942	PKS 2153 − 69	329.2749	−69.6899	0.0283	Marenbach+Appenzeller (1982)	rdg	MIS	0	Classified as FRI by Morganti+ (1993). Optical spectrum type Seyfert 1/LINER, SA0 host galaxy.
J2156.3 − 0036	PKS B2153 − 008	329.0615	−0.6179	0.495	Hook+ (2003)	fsrq	BLLAC	0	-
J2156.9 − 0854	NVSS J215650 − 085535	329.2097	−8.9265	0.577	Table A2	bll	BLLAC	1	SDSS
J2157.5 + 3127	B2 2155 + 31	329.3701	+31.4504	1.49	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2158.1 − 1501	PKS 2155 − 152	329.5262	−15.0193	0.672	White+ (1988)	fsrq	CLAGN	0	Peterson+ (1978) observed a featureless spectrum, while White's spectrum has several prominent emission lines.
J2158.8 − 3013	PKS 2155 − 304	329.7169	−30.2256	0.116	Falomo+ (1993)	bll	BLLAC	0	-
J2159.1 − 2840	LEDA 3218689	329.7955	−28.6879	0.271	Colless+ (2001)	bll	BLLAC	0	-
J2159.8 − 4751	PMN J2200 − 4751	329.9963	−47.8665	0.581	Table A2	bcu	UNCL	1	-
J2200.1 + 2138	TXS 2157 + 213	330.0592	+21.6325	0.470	Table A2	bll	BLLAC	1	SDSS
J2200.3 + 1029	TXS 2157 + 102	330.0331	+10.5022	0.172	Afanas'ev+ (2006)	bll	BLLAC	0	-
J2200.7 − 2414	NVSS J220036 − 241428	330.1528	−24.2410	0.62	Table A2	bcu	UNCL	1	-
J2201.0 − 5907	SUMSS J220107 − 590639	330.2805	−59.1113	0.121	Table A2	bcu	UNCL	1	-
J2201.5 + 2950	RX J2201.3 + 2949	330.3492	+29.8263	0.149	de Menezes+ (2020)	bcu	BLLAC	0	-
J2201.5 − 8339	PKS 2155 − 83	330.5802	−83.6366	1.87	Shaw+ (2012)	fsrq	FSRQ	0	-
J2201.9 − 1706	RBS 1813	330.4821	−17.1147	0.169	Bauer+ (2000)	bll	BLLAC	0	Note that Schwope+ (2000) reported $z \sim 0.1693$ and flagged it as uncertain
J2202.7 + 4216	BL Lac	330.6804	+42.2778	0.0686	Oke+Gunn (1974)	BLL	BLLAC	0	-
J2202.7 − 5637	MS 2159.5 − 5649	330.7221	−56.5953	0.0489	Stocke+ (1991)	bll	MIS	0	Classified as FR0 by Glowaki+ (2017)
J2203.4 + 1725	PKS 2201 + 171	330.8621	+17.4301	1.08	Smith+ (1977)	fsrq	FSRQ	0	-
J2204.3 + 0438	4C +04.77	331.0736	+4.6672	0.0270	Wills+Wills (1976)	bll	SEY	0	Although it is classified as BL Lac Object, Verón-Cetty+Verón (1993) clearly showed a Seyfert-1 type nucleus literally flooded by the host galaxy emission, given the small distance (SDSS image of the host). Scarpa+ (1999) showed the presence of an optical jet.
J2204.5 + 3634	MG3 J220423 + 3632	331.0879	+36.5436	0.0730	Marchã+ (1996)	bll	BLLAC	0	-
J2205.0 + 7432	S5 2205 + 74	331.4474	+74.6059	1.38	Table A2	bcu	UNCL	1	-
J2206.8 − 0032	PMN J2206 − 0031	331.6803	−0.5174	1.05	Shaw+ (2013)	bll	BLLAC	0	SDSS spectrum is noisy, so that the automatic pipeline failed to identify the MgII line at $\sim$ 5700 Å
J2207.0 + 3607	1RXS J220708.5 + 360935	331.7854	+36.1597	-	-	bcu	UNCL	3	-
J2207.1 + 4316	87GB 220504.7 + 430144	331.7897	+43.2743	1.64	Table A2	bcu	UNCL	1	-
J2207.5 − 5346	PKS 2204 − 54	331.9322	−53.7761	1.21	Wilkes+ (1983)	fsrq	FSRQ	0	Browne+ (1975) reported $z \sim 0.51$, but it was challenged by Wilkes.
J2207.6 + 0053	PMN J2207 + 0052	331.9085	+0.8758	0.970	Peña-Herazo+ (2021)	bcu	CLAGN	0	SDSS spectrum is featureless, while LAMOST displays a broad emission line identified as MgII.

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2208.1 − 4507	PMN J2208 − 4509	332.0368	−45.1554	0.524	Table A2	bcu	UNCL	1	-
J2209.4 + 4329	B3 2207 + 432	332.3646	+43.4803	0.618	Table A2	bcu	UNCL	1	Steep radio spectrum ($\alpha \sim -0.6, -0.7$)
J2209.7 − 0451	NVSS J220941 − 045111	332.4237	−4.8529	0.397	Paiano+ (2019)	bll	BLLAC	0	-
J2209.8 − 5028	PMN J2210 − 5030	332.5667	−50.5182	0.900	Table A2	bcu	UNCL	1	-
J2210.8 + 3203	1RXS J221058.3 + 320327	332.7439	+32.0614	0.220	Table A2	bcu	UNCL	1	-
J2211.0 − 0003	RX J2211.1 − 0003	332.7848	−0.0507	0.362	SDSS	bll	BLLAC	0	-
J2211.2 − 1325	PKS 2208 − 137	332.8504	−13.4694	0.392	Peterson+ (1976)	bcu	FSRQ	0	-
J2211.4 − 7040	PMN J2211 − 7039	332.9843	−70.6541	0.2	Table A2	bll	UNCL	1	-
J2212.0 + 2356	PKS 2209 + 236	333.0249	+23.9279	1.13	Sowards-Emmerd+ (2003)	fsrq	CLAGN	0	Hook+ (1996) reported a featureless spectrum, although the published image shows a weak feature at $\sim$ 6000 Å consistent with MgII. SDSS spectrum displays a prominent MgII line, which could have not been missed by Hook, if present at that epoch
J2212.2 − 7251	PMN J2211 − 7249	332.8471	−72.8187	0.280	Table A2	bcu	UNCL	1	-
J2212.6 + 2800	MG3 J221240 + 2759	333.1629	+27.9940	0.499	Table A2	bll	BLLAC	1	Marchesini+ (2019). SDSS inconclusive, although there is one weak emission feature at $\sim$ 4300 Å, which might be MgII at $z \sim 0.54$
J2212.8 + 0647	TXS 2210 + 065	333.2118	+6.7691	1.12	Amirkhanyan+ (2004)	fsrq	FSRQ	0	LAMOST
J2212.9 − 2526	PKS 2210 − 25	333.2604	−25.4917	1.83	Wilkes+ (1983)	fsrq	FSRQ	0	-
J2213.5 − 4754	SUMSS J221330 − 475426	333.3765	−47.9070	0.378	Table A2	bll	BLLAC	1	Marchesini+ (2019)
J2216.8 + 3103	S3 2214 + 30	334.1780	+31.0432	2.46	Healey+ (2008)	fsrq	FSRQ	0	-
J2216.9 + 2421	B2 2214 + 24B	334.2534	+24.3628	0.505	Sowards-Emmerd+ (2005)	bll	BLLAC	0	SDSS reported $z \sim 1.033$, by identifying the emission line at $\sim$ 5700 Å as MgII. Since the shape of the continuum is typical of a BLLAC, the cited line is more likely [OII] at $z = 0.505$. The value has been also confirmed by another spectrum taken by Healey+ (2008). Shaw+ (2013) reported a featureless spectrum, likely due to an increased jet activity
J2218.6 + 1941	GALEXASC J221854.64 + 193841.6	334.7274	+19.6448	0.690	Table A2	bcu	UNCL	1	-
J2219.2 + 1806	MG1 J221916 + 1806	334.8087	+18.1099	1.07	Shaw+ (2012)	fsrq	FSRQ	0	Sowards-Emmerd+ (2005) reported $z \sim 1.802$, but it was flagged as uncertain
J2219.2 − 0342	PKS 2216 − 03	334.7168	−3.5936	0.901	Lynds (1967)	fsrq	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2220.5 + 2813	RX J2220.4 + 2814	335.1197	+28.2321	0.149	SDSS	bll	BLLAC	0	Marchesi+ (2018) reported a featureless spectrum, likely due to an increase of the jet activity
J2221.5 − 5225	PMN J2221 − 5224	335.3721	−52.4244	0.748	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2221.9 − 3504	NVSS J222227 − 350942	335.6128	−35.1639	-	-	fsrq	UNCL	3	-
J2222.8 + 1209	TXS 2220 + 119	335.7208	+12.2305	1.39	Afanas'ev+ (2006)	bcu	FSRQ	0	-
J2223.3 + 0102	SDSS J222329.56 + 010226.6	335.8732	+1.0407	0.616	Table A2	bll	BLLAC	1	Featureless, Shaw+ (2013). Massaro+ (2014) suggested a tentative $z \sim 0.29$ on the basis of the SDSS spectrum. There are two weak emission features at $\sim$ 4300 Å and $\sim$ 6500 Å, which might be identified as [OIII]
J2224.0 − 1127	PKS 2221 − 116	336.0332	−11.4392	0.115	Hook+ (2003)	bll	BLLAC	0	-
J2224.3 + 7737	NVSS J222721 + 773319	336.8401	+77.5553	0.1	Table A2	bcu	UNCL	1	-
J2224.5 + 0353	1RXS J222426.5 + 035445	336.1041	+3.9162	0.293	SDSS	bcu	SEY	0	Sy2/LINER?
J2225.5 − 1114	PKS 2223 − 114	336.4322	−11.2280	0.997	Sbarufatti+ (2006)	bll	BLLAC	0	-
J2225.6 + 2120	PKS 2223 + 21	336.4085	+21.3018	1.96	Arp (1970)	fsrq	FSRQ	0	SDSS
J2225.7 − 0457	3C 446	336.4469	−4.9504	1.40	Schmidt (1966)	fsrq	CLAGN	0	Many authors reported significant optical spectral variability (e.g., Stephens+Miller 1984, Barbieri+ 1985, Perez+ 1989, ...)
J2226.6 + 0210	2MASS J22263636 + 0210373	336.6518	+2.1770	0.450	SDSS	bcu	BLLAC	0	-
J2226.8 + 0051	PKS B2224 + 006	336.6939	+0.8698	2.26	Hook+ (2003)	fsrq	FSRQ	0	SDSS
J2227.9 + 0036	PMN J2227 + 0037	336.9922	+0.6182	0.503	Table A2	bll	BLLAC	1	SDSS
J2227.9 − 3031	PKS 2225 − 308	336.9610	−30.5621	0.0581	Stein (1996)	rdg	MIS	0	Classified FRI by Angioni (2020)
J2228.0 − 4155	RBS 1864	336.9967	−41.9524	-	-	bcu	BLLAC	2	6dF inconclusive, although there is an emission-line complex at $\sim 6300 - 6400$ Å: if identified as Hβ-[OIII], then $z \sim 0.3$. Schwope+ (2000) suggested a tentative $z \sim 0.085$ and a classification as X-ray Transient Galaxy (XTG).
J2228.6 − 1636	2MASS J22283018 − 1636432	337.1258	−16.6120	0.525	Paiano+ (2019)	bll	BLLAC	0	-
J2229.1 + 2254	NVSS J222913 + 225511	337.3078	+22.9198	0.440	Paiano+ (2019)	bll	BLLAC	0	The optical counterpart SDSS J222911.17 + 225459.7 is $\sim 39''$ distant from the radio centroid, although still consistent with the position error of NVSS ($\sim 45''$).
J2229.2 − 6911	PKS 2225 − 694	337.2507	−69.1751	0.907	Titov+ (2017)	bcu	FSRQ	0	-
J2229.7 − 0832	PKS 2227 − 08	337.4170	−8.5485	1.56	Wilkes+ (1983)	FSRQ	FSRQ	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2230.9 − 7815	PKS 2225 − 785	337.6273	−78.2657	0.511	Peña-Herazo+ (2021)	bcu	FSRQ	0	-
J2231.0 − 4416	PKS 2227 − 445	337.7352	−44.2750	1.33	White+ (1988)	fsrq	FSRQ	0	-
J2232.6 + 1143	CTA 102	338.1517	+11.7308	1.04	Schmidt (1965)	FSRQ	FSRQ	0	-
J2232.6 − 2023	NVSS J223248 − 202226	338.2033	−20.3739	0.386	Jiménez-Bailón+ (2012)	bll	BLLAC	0	-
J2232.8 + 1334	RX J2233.0 + 1335	338.2547	+13.6006	0.214	Caccianiga+ (2002)	bll	BLLAC	0	SDSS
J2233.9 − 1229	PKS 2231 − 127	338.4789	−12.5095	0.181	Table A2	bcu	UNCL	1	-
J2234.1 − 2656	PMN J2234 − 2656	338.5350	−26.9457	0.252	Table A2	bll	UNCL	1	-
J2235.1 − 0623	PMN J2235 − 0623	338.7629	−6.3836	0.520	Table A2	bcu	UNCL	1	-
J2235.3 − 4836	PKS 2232 − 488	338.8052	−48.5997	0.506	Jauncey+ (1984)	fsrq	FSRQ	0	6dF
J2235.8 − 3627	NVSS J223554 − 362901	338.9785	−36.4841	0.442	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2236.2 − 1706	PKS 2233 − 173	339.0397	−17.1061	0.647	Hook+ (2003)	bll	BLLAC	0	-
J2236.3 + 2828	B2 2234 + 28A	339.0936	+28.4826	0.795	Schmidt (1977)	fsrq	CLAGN	0	Richstone+Schmidt (1980) reported EW(MgII) $= 73 \pm 30$ Å, while Shaw+ (2013) found a weak MgII line and classified the source as BLLAC. The prominent MgII is also clearly visible in the optical spectrum published by Jackson+Browne (1991)
J2236.4 − 2309	PMN J2236 − 2309	339.1093	−23.1574	-	-	bcu	UNCL	3	-
J2236.5 − 1433	PKS 2233 − 148	339.1420	−14.5562	1.52	Table A2	BLL	BLLAC	1	Shaw+ (2013). Warning: in the literature, it is often reported $z = 0.325$, with reference to Johnston+ (1995), who in turn referred to Schmidt+Green (1983), but the latter paper does not contain the source. The featureless spectrum has been reported by other authors, and Shaw is just the latest one.
J2236.6 + 3706	NVSS J223626 + 370713	339.1098	+37.1204	0.235	de Menezes+ (2020)	bll	BLLAC	0	-
J2237.0 − 3921	NVSS J223708 − 392137	339.2838	−39.3606	0.297	Shaw+ (2012)	fsrq	FSRQ	0	-
J2239.2 − 5657	PKS 2236 − 572	339.8003	−57.0169	0.569	Titov+ (2011)	fsrq	FSRQ	0	-
J2240.3 − 1246	1RXS J224014.7 − 124736	340.0630	−12.7941	0.167	Table A2	bcu	UNCL	1	-
J2240.7 − 4746	SUMSS J224042 − 474733	340.1754	−47.7927	0.134	Table A2	bcu	UNCL	1	-
J2241.1 − 4122	WISEA J224103.56 − 412155.5	340.2613	−41.3653	1.15	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2241.2 + 4120	B3 2238 + 410	340.2800	+41.3366	0.726	Britzen+ (2007)	bll	BLLAC	0	Meisner+Romani (2010) estimated an imaging $z \sim 0.520$, which is sometimes adopted in the literature. The Britzen's value is spectroscopic, based on the detection of two oxygen lines and the calcium break
J2241.3 + 2943	1RXS J224123.5 + 294244	340.3479	+29.7124	0.553	SDSS	bcu	BLLAC	0	-
J2243.4 − 2544	PKS 2240 − 260	340.8600	−25.7419	0.774	Stickel+ (1993)	bll	BLLAC	0	-
J2243.5 − 3931	NVSS J224326 − 393353	340.8587	−39.5647	1.20	Table A2	bcu	UNCL	1	-
J2243.7 − 1231	RBS 1888	340.9181	−12.5166	0.226	Fischer+ (1998)	bll	BLLAC	1	-
J2243.8 − 2510	PMN J2243 − 2505	340.9182	−25.0998	1.62	Table A2	bcu	UNCL	1	-
J2243.9 + 2021	RGB J2243 + 203	340.9781	+20.3510	0.53	Rosa González+ (2019)	bll	BLLAC	1	-
J2244.2 + 4057	TXS 2241 + 406	341.0530	+40.9538	1.17	Shaw+ (2012)	fsrq	FSRQ	0	-
J2244.9 − 0007	NVSS J224448 − 000616	341.2004	−0.1054	0.641	Sandrinelli+ (2013)	bll	BLLAC	0	SDSS inconclusive
J2245.5 − 1734	NVSS J224531 − 173357	341.3830	−17.5661	0.653	Table A2	bcu	UNCL	1	-
J2245.9 + 1544	87GB 224338.7 + 152914	341.5208	+15.7432	0.597	Paiano+ (2019)	bll	BLLAC	0	-
J2246.7 − 5207	RBS 1895	341.6754	−52.1112	0.194	Beuermann+ (1999)	bcu	BLLAC	0	-
J2247.4 − 0001	PKS 2244 − 002	341.8758	+0.0018	0.949	Shaw+ (2013)	bll	BLLAC	0	There are many spectra with different results. Hook+ (2003) suggested a tentative $z \sim 0.094$ on the basis of the identification of a line at $\sim$ 4100 Å as OII. Sandrinelli+ (2013) found a featureless spectrum, but her wavelength interval starts at $\sim$ 4200 Å. Shaw+ (2013) suggested $z \sim 0.949$ on the basis of two lines, one at $\sim$ 5450 Å identified as MgII, and the other at $\sim$ 7250 Å should be [OII]; no line at $\sim$ 4100 Å. The SDSS spectrum is quite noisy, but it confirms the line at $\sim$ 5500 Å, which implies that the line detected by Hook might be CIII].
J2247.5 − 3700	PKS 2244 − 37	341.7659	−36.9629	2.25	Wilkes+ (1983)	fsrq	FSRQ	0	-
J2247.8 + 4413	RGB J2247 + 442	341.9717	+44.2209	1.90	Table A2	bll	BLLAC	1	Massaro+ (2015)
J2248.7 − 3235	PKS 2245 − 328	342.1612	−32.5978	2.27	Peterson+ (1979)	fsrq	FSRQ	0	-
J2248.9 + 2106	PKS 2246 + 208	342.2524	+21.1175	1.28	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS. Hook+ (1996) reported a featureless spectrum, although a weak line at $\sim$ 6400 Å corresponding to MgII is visible

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2249.4 − 1300	RBS 1899	342.2946	−13.0006	0.607	Sbarufatti+ (2009)	bll	BLLAC	0	Landoni+ (2013) cast some doubts, because the features seems to be contaminated by atmospheric absorption
J2249.7 − 5944	SUMSS J224938 − 594421	342.4102	−59.7397	0.241	Table A2	bcu	UNCL	1	-
J2249.9 + 0452	WISEA J225007.35 + 045617.3	342.5306	+4.9382	0.763	Table A2	bcu	UNCL	1	-
J2250.0 + 3825	B3 2247 + 381	342.5240	+38.4103	0.119	Laurent-Muehleisen+ (1998)	bll	BLLAC	0	LAMOST
J2250.0 − 1250	PKS 2247 − 131	342.4984	−12.8547	0.599	Table A2	bcu	UNCL	1	-
J2250.4 + 1748	87GB 224805.0 + 173330	342.6365	+17.8208	0.344	Paiano+ (2019)	bll	BLLAC	0	-
J2250.4 − 4206	PMN J2250 − 4206	342.5926	−42.1037	0.289	Table A2	bll	UNCL	1	Hewitt+Burbidge (1993) reported $z \sim 1.04$ from the PhD thesis of M. Drinkwater (1987). Ackermann+ (2011) reported $z \sim 0.119$ of unknown origin.
J2250.7 − 2806	PMN J2250 − 2806	342.6854	−28.1109	0.525	Shaw+ (2012)	bll	BLLAC	0	-
J2251.5 − 4928	SUMSS J225128 − 492912	342.8696	−49.4864	0.142	Table A2	bll	UNCL	1	-
J2251.7 − 3208	1RXS J225146.9 − 320614	342.9480	−32.1036	0.246	Böhringer+ (2004)	bcu	BLLAC	0	-
J2252.0 + 4031	MG4 J225201 + 4030	342.9990	+40.5162	0.229	Shaw+ (2013)	bll	BLLAC	0	-
J2252.6 + 1245	2MASS J22523220 + 1245109	343.1341	+12.7530	0.497	SDSS	bll	BLLAC	0	-
J2253.2 − 1232	TXS 2250 − 127	343.3449	−12.5315	0.822	Table A2	bcu	UNCL	1	Steep radio spectrum ($\alpha \sim -0.7$)
J2253.3 + 3233	CRATES J225312 + 323615	343.3021	+32.6012	0.258	Pursimo+ (2013)	bcu	FSRQ	0	Optical spectrum published in Titov+ (2017)
J2253.7 + 1405	NVSS J225354 + 140439	343.4760	+14.0769	0.327	SDSS	bll	BLLAC	0	-
J2253.9 + 1609	3C 454.3	343.4906	+16.1482	0.858	Lynds (1967)	FSRQ	FSRQ	0	LAMOST
J2254.2 + 4305	B3 2251 + 428	343.4840	+43.0754	0.105	Table A2	bcu	UNCL	1	-
J2254.8 − 2725	NVSS J225453 − 272509	343.7217	−27.4191	0.333	Londish+ (2002)	bll	BLLAC	0	-
J2255.2 + 2411	MG3 J225517 + 2409	343.8141	+24.1698	0.547	Table A2	bll	BLLAC	1	Paiano+ (2019). Possible neutrino source. SDSS inconclusive, although two weak emission features might point to $z \sim 1.31$: $\sim$ 4400 Å CIII], $\sim$ 6500 Å MgII
J2256.0 − 2740	PKS 2253 − 278	344.0006	−27.5989	1.75	Hook+ (2003)	fsrq	FSRQ	0	-
J2256.4 − 7119	PMN J2256 − 7115	344.0368	−71.2607	-	-	bcu	UNCL	3	-
J2256.6 − 2011	PKS 2254 − 204	344.1717	−20.1946	0.858	Table A2	bll	BLLAC	1	Landoni+ (2014)
J2256.7 + 1307	NVSS J225624 + 130541	344.1011	+13.0949	0.513	Table A2	bll	BLLAC	1	SDSS
J2257.5 + 0748	OY 91	344.3221	+7.7201	0.191	Stickel+ (1988)	bll	BLLAC	0	LAMOST
J2258.1 − 2759	PKS 2255 − 282	344.5248	−27.9726	0.926	Browne+ (1975)	fsrq	FSRQ	0	6dF

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2258.3 − 3643	MRSS 406 − 025483	344.5626	−36.7429	0.319	Table A2	bll	BLLAC	1	Landoni+ (2015)
J2258.4 − 5524	PMN J2258 − 5526	344.5791	−55.4271	0.479	Landt+ (2004)	bll	BLLAC	0	-
J2258.5 − 8247	PMN J2258 − 8246	344.4975	−82.7814	0.252	Table A2	bcu	UNCL	1	-
J2259.7 − 3549	NVSS J225941 − 354846	344.9243	−35.8130	-	-	fsrq	UNCL	3	-
J2259.8 − 1552	GALEXASC J225957.26 − 155332.5	344.9886	−15.8926	1.62	Table A2	bcu	UNCL	1	-
J2300.1 + 4053	NVSS J230012 + 405224	345.0515	+40.8736	0.238	Table A2	bll	BLLAC	1	Marchesi+ (2018)
J2300.3 + 3136	NVSS J230022 + 313703	345.0952	+31.6179	0.502	Table A2	bll	BLLAC	1	Titov+ (2017)
J2300.7 − 2645	PKS 2257 − 270	345.1063	−26.7397	1.48	Wilkes+ (1983)	fsrq	FSRQ	0	-
J2300.9 + 7108	87GB 225907.3 + 705409	345.2093	+71.1705	1.75	Table A2	bcu	UNCL	1	-
J2301.0 − 0158	PKS B2258 − 022	345.2832	−1.9679	0.777	Hook+ (2003)	fsrq	FSRQ	0	SDSS
J2302.8 − 1841	PKS 2300 − 18	345.7624	−18.6905	0.129	Searle+Bolton (1968)	rdg	MIS	0	Classified as FRI by Heckman+ (1984). Tidal interaction with close companion, precessing jet, Hunstead+ (1984). 6dF
J2304.3 + 0618	PKS 2301 + 060	346.1179	+6.3356	1.27	White+ (1988)	bcu	FSRQ	-	LAMOST spectrum found the correct redshift, but it displays also an unknown strong emission line at $\sim$ 6000 Å: artifact?
J2304.6 + 3704	1RXS J230437.1 + 370506	346.1530	+37.0854	-	-	bll	BLLAC	2	Shaw+ (2013). Wu+ (2012) reported $z \sim 0.57$ of unknown origin.
J2306.6 − 1105	RBS 1943	346.6479	−11.0637	0.640	Table A2	bll	UNCL	1	-
J2307.4 − 1206	1RXS J230722.5 − 120520	346.8421	−12.0882	0.681	Table A2	bll	BLLAC	1	Piranomonte+ (2007).
J2307.6 + 1451	MG1 J230734 + 1449	346.8917	+14.8383	0.503	Sowards-Emmerd+ (2005)	bll	BLLAC	0	Sowards-Emmerd classified the source as Narrow-Line Radio Galaxy (spectrum not shown, no information on emission lines). Newer observations by Healey+ (2008), Shaw+ (2013), and SDSS showed only a featureless spectrum, thus suggesting a BLLAC classification, favored also by the inverted radio spectrum ($\alpha \sim 0.5$).
J2308.9 + 1111	MG1 J230850 + 1112	347.2159	+11.1971	0.824	Table A2	bcu	UNCL	1	Steep radio spectrum ($\alpha \sim -0.73$)
J2309.7 − 3632	WISEA J230940.84 − 363248.7	347.4202	−36.5469	-	-	bcu	BLLAC	2	Rajagopal+ (2021)
J2311.0 + 0205	NVSS J231101 + 020504	347.7554	+2.0848	0.497	Table A2	bll	BLLAC	1	Titov+ (2017). SDSS and LAMOST inconclusive (although the latter shows some absorption features, which might be the calcium break and the G band at $z \sim 0.46$
J2311.0 + 3425	B2 2308 + 34	347.7722	+34.4197	1.82	Wills+Wills (1976)	FSRQ	FSRQ	0	SDSS
J2311.7 + 2604	MG3 J231144 + 2604	347.9412	+26.0799	1.75	SDSS	bcu	FSRQ	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2311.8 + 4541	MG4 J231144 + 4543	347.9475	+45.7322	1.45	Vermeulen+Taylor (1995)	fsrq	FSRQ	0	-
J2312.5 + 7241	CRATES J2312 + 7241	348.0821	+72.6908	2.02	Table A2	bcu	UNCL	1	-
J2313.4 − 6922	SUMSS J231347 − 692332	348.4495	−69.3919	0.5	Table A2	bcu	UNCL	1	-
J2313.5 + 3945	87GB 231102.6 + 393314	348.3514	+39.8305	1.19	Table A2	bcu	UNCL	1	-
J2313.9 − 4501	PKS 2311 − 452	348.5391	−44.9303	2.88	Stickel+ (1989)	bcu	FSRQ	0	-
J2314.0 + 1445	RGB J2313 + 147	348.4889	+14.7398	0.164	Sowards-Emmerd+ (2005)	bll	BLLAC	0	SDSS
J2315.6 − 5018	PKS 2312 − 505	348.9347	−50.3110	0.811	Shaw+ (2013)	bll	BLLAC	0	-
J2316.9 − 5210	SUMSS J231701 − 521003	349.2572	−52.1671	0.646	Marchesini+ (2019)	bll	BLLAC	0	-
J2317.0 + 3756	B3 2314 + 377	349.2928	+37.9967	1.10	Table A2	bcu	UNCL	1	-
J2317.4 − 4533	SUMSS J231731 − 453400	349.3833	−45.5666	0.150	Table A2	bll	BLLAC	1	6dF
J2318.2 + 1915	TXS 2315 + 189	349.5955	+19.2478	2.16	SDSS	bcu	FSRQ	0	-
J2319.1 − 4207	PKS 2316 − 423	349.7746	−42.1134	0.0543	Crawford+Fabian (1994)	bll	BLLAC	0	6dF. Gioia+Luppino (1994) reported $z = 0.045$: typo?
J2319.7 + 1609	RX J2319.6 + 1611	349.9310	+16.1973	0.152	Table A2	bll	BLLAC	1	Landoni+ (2013)
J2320.8 − 0823	PKS 2318 − 087	350.3260	−8.4560	3.16	Titov+ (2011)	fsrq	FSRQ	0	-
J2321.0 − 6308	2MASS J23203986 − 6309181	350.1660	−63.1550	0.200	Schwope+ (2000)	bll	BLLAC	0	-
J2321.5 − 1619	NVSS J232137 − 161935	350.4042	−16.3246	0.694	Paiano+ (2019)	bll	BLLAC	0	-
J2321.7 − 6438	PMN J2321 − 6438	350.4259	−64.6353	0.17	Table A2	bll	BLLAC	1	Desai+ (2019)
J2321.9 + 2734	4C +27.50	350.4994	+27.5462	1.26	Stickel+Kühr (1992)	fsrq	FSRQ	0	SDSS. Sargent (1973) associated this source with the cluster A2584 ($z = 0.1188$), but it is behind it, as proved by Stickel+Kühr.
J2321.9 + 3204	B2 2319 + 31	350.4790	+32.0688	1.49	Shaw+ (2012)	fsrq	FSRQ	0	Marchã+ (1996) reported a featureless spectrum, but due to low source flux ($\sim 1-2\times10^{-17}$ erg cm^{-2} s^{-1} Å^{-1} to be compared with Shaw's value $\sim 6\times10^{-17}$ erg cm^{-2} s^{-1} Å^{-1}), which resulted in a low S/N spectrum. However, a weak CIII] line can be spotted
J2322.1 + 4440	B3 2319 + 444	350.5848	+44.7618	1.25	Britzen+ (2008)	fsrq	BLLAC	0	Sowards-Emmerd+ (2005) reported $z \sim 1.31$ flagged as uncertain and a FSRQ classification. However, other published spectra are featureless (Hook+ 1996, Henstock+ 1997) or with weak features (Truebenbach+Darling 2017, perhaps an [OIII] line in Sp1)
J2322.6 − 0735	PMN J2322 − 0736	350.7170	−7.6182	0.686	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2322.7 + 3436	TXS 2320 + 343	350.6834	+34.6039	0.0964	Laurent-Muehleisen+ (1998)	bll	BLLAC	0	LAMOST
J2322.8 − 4916	SUMSS J232254 − 491629	350.7268	−49.2750	0.372	Table A2	bll	BLLAC	1	Masetti+ (2013)
J2323.5 − 0317	PKS 2320 − 035	350.8831	−3.2847	1.41	Browne+ (1975)	fsrq	FSRQ	0	-
J2323.6 − 0617	TXS 2321 − 065	350.9130	−6.2998	2.14	Titov+ (2011)	fsrq	FSRQ	0	-
J2323.8 + 4210	1ES 2321 + 419	350.9670	+42.1829	-	-	bll	BLLAC	2	Paiano+ (2017). Perlman+ (1996) proposed $z \sim 0.059$, but this value was never confirmed, despite of the several attempts, and has been definitely confuted by Paiano. There is also an inconclusive LAMOST spectrum.
J2324.7 + 0801	PMN J2324 + 0801	351.1889	+8.0350	0.65	Table A2	bll	BLLAC	1	Peña-Herazo+ (2021)
J2324.7 − 4041	1ES 2322 − 409	351.1861	−40.6804	0.174	Goldoni+ (2021)	bll	BLLAC	0	-
J2325.2 + 3957	B3 2322 + 396	351.3245	+39.9601	0.936	Table A2	bll	BLLAC	1	Shaw+ (2013)
J2325.4 − 3559	CTS 0490	351.3692	−35.9651	0.360	Maza+ (1995)	fsrq	AMB	0	Maza published the redshift value only, no spectrum, no information about the emission lines. No other spectra or line information have been published.
J2325.4 − 4800	PKS 2322 − 482	351.3620	−48.0048	0.221	Hook+ (2003)	bll	BLLAC	0	-
J2325.6 + 1644	NVSS J232538 + 164641	351.4088	+16.7785	0.355	Table A2	bll	BLLAC	1	Massaro+ (2015)
J2325.7 + 1821	MG1 J232550 + 1822	351.4498	+18.3699	0.413	Table A2	bcu	UNCL	1	-
J2326.2 + 0113	SDSS J232625.63 + 011208.6	351.6068	+1.2024	1.60	SDSS	bcu	FSRQ	0	-
J2326.9 − 0201	PKS 2324 − 02	351.7241	−2.0372	0.189	Stickel+ (1993)	rdg	MIS	0	SDSS. Classified FRII by Angioni (2020)
J2327.4 + 0444	NVSS J232733 + 044740	351.8906	+4.7951	0.254	Table A2	bcu	UNCL	1	Peña-Herazo+ (2021) classified it as BLLAC on the basis of LAMOST DR5 data, but the spectrum is no more available in DR7
J2327.5 + 0939	PKS 2325 + 093	351.8899	+9.6693	1.85	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J2328.3 − 4036	PKS 2325 − 408	352.0803	−40.5861	1.97	Titov+ (2013)	fsrq	FSRQ	0	-
J2329.0 + 0832	PMN J2329 + 0834	352.2741	+8.5711	0.946	Landt+ (2001)	fsrq	FSRQ	0	SDSS
J2329.2 + 3755	NVSS J232914 + 375414	352.3094	+37.9040	1.36	Table A2	bll	BLLAC	1	Masetti+ (2013). Ackermann+ (2011) reported $z = 0.264$, but the value was not confirmed by Shaw+ (2013)
J2329.3 − 4733	PKS 2326 − 477	352.3238	−47.5053	1.30	Peterson+Bolton (1972)	fsrq	FSRQ	0	6dF
J2329.3 − 4955	PKS 2326 − 502	352.3370	−49.9280	0.518	Jauncey+ (1984)	FSRQ	FSRQ	0	-
J2329.7 − 2118	PKS 2327 − 215	352.4234	−21.2957	0.0308	Jones+ (2009)	rdg	MIS	0	6dF. Classified FRI by Angioni (2020)

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2330.3 − 2332	2MASS J23301617 − 2336413	352.5674	−23.6115	1.19	Table A2	bcu	UNCL	1	-
J2330.5 + 1102	4C +10.73	352.6702	+11.0052	1.50	Smith+ (1977)	fsrq	FSRQ	0	SDSS
J2330.6 − 3726	PKS 2327 − 376	352.6491	−37.4105	0.279	Landt+ (2001)	bll	BLLAC	0	6dF
J2331.0 − 2147	PMN J2331 − 2148	352.7668	−21.8042	0.563	Halpern+Crotts (2009)	fsrq	FSRQ	0	-
J2331.1 − 1653	PKS 2328 − 172	352.7311	−16.9443	1.28	Table A2	bcu	UNCL	1	-
J2331.3 − 1558	PKS 2329 − 16	352.9111	−15.9492	1.15	Wright+ (1983)	fsrq	FSRQ	0	-
J2331.5 − 0258	GALEXASC J233112.94 − 030129.9	352.8040	−3.0251	0.560	Table A2	bcu	UNCL	1	-
J2332.1 − 4118	PKS 2329 − 415	353.0794	−41.3104	0.671	Drinkwater+ (1997)	fsrq	FSRQ	0	-
J2333.4 − 0133	PKS B2330 − 017	353.3195	−1.5187	1.06	Perlman+ (1998)	fsrq	FSRQ	0	SDSS
J2334.2 + 0736	TXS 2331 + 073	353.5535	+7.6077	0.401	Sowards-Emmerd+ (2005)	fsrq	FSRQ	0	SDSS
J2334.8 + 1432	NVSS J233453 + 143214	353.7243	+14.5374	0.877	Table A2	bll	BLLAC	1	Shaw+ (2013).
J2334.9 − 2346	PKS 2331 − 240	353.4802	−23.7280	0.0477	Wills+Wills (1976)	agn	CLAGN	0	The jet changed its viewing angle, from a MIS to a SEY, Hernández-García+ (2017)
J2335.4 − 0128	PKS 2332 − 017	353.8351	−1.5193	1.19	Wills+Lynds (1978)	fsrq	FSRQ	0	SDSS
J2336.5 − 7622	PMN J2336 − 7620	354.1150	−76.3439	0.147	Table A2	bll	UNCL	1	-
J2336.6 + 2356	B2 2334 + 23	354.1754	+23.9248	0.127	Owen+ (1995)	bcu	MIS	0	Classified FRI in the same paper
J2336.6 − 4115	PKS 2333 − 415	354.1416	−41.2561	1.41	Hook+ (2003)	fsrq	FSRQ	0	-
J2336.9 − 5859	PMN J2337 − 5901	354.3617	−59.0205	0.672	Table A2	bcu	UNCL	1	-
J2338.0 − 0230	PKS 2335 − 027	354.4889	−2.5160	1.07	Wills+Lynds (1978)	fsrq	FSRQ	0	SDSS
J2338.1 + 0325	PKS 2335 + 03	354.5319	+3.4469	0.269	Verón-Cetty+Verón (1993)	agn	CLAGN	0	Early observations by Strittmatter+ (1974) reported a continuous spectrum. Additionally, Wills+Lynds (1978) found the same, with the exception of a feature at $\sim$ 4738 Å, which they judge unreliable. For some time, this source was classified as BLLAC, until Verón-Cetty+Verón reported a Seyfert 2-type spectrum, and identified the Wills+Lynds' feature as [OII]. SDSS spectrum confirms.
J2338.9 + 2124	RX J2338.8 + 2124	354.7349	+21.4115	0.291	Owen+ (1995)	bll	BLLAC	0	-
J2339.2 − 7403	1RXS J233919.8 − 740439	354.8370	−74.0766	0.139	Table A2	bll	BLLAC	1	Desai+ (2019)
J2339.3 − 2656	NVSS J233917 − 265638	354.8239	−26.9442	1.41	Table A2	bcu	UNCL	1	-
J2339.6 + 0242	CRATES J233930 + 024420	354.8738	+2.7348	2.66	Pursimo+ (2013)	bcu	FSRQ	0	SDSS

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2340.5 + 3854	GALEXASC J234042.83 + 385510.7	355.1786	+38.9199	0.293	Table A2	bcu	UNCL	1	-
J2340.8 + 8015	1RXS J234051.4 + 801513	355.2260	+80.2544	0.274	Caccianiga+ (2002)	bll	BLLAC	0	-
J2341.8 − 2917	PKS 2338 − 295	355.3740	−29.3208	0.0523	Rhee+Katgert (1992)	rdg	MIS	0	Classified FR0 by Glowacki+ (2017)
J2343.6 + 3438	1RXS J234332.5 + 343957	355.8899	+34.6642	0.365	Piranomonte+ (2007)	bll	BLLAC	0	SDSS
J2343.7 − 5624	PKS 2340 − 567	355.8629	−56.4400	1.24	Pierre+ (2016)	bcu	MIS	0	Steep radio spectrum ($\alpha \sim -0.84$), classified as HERG by Chiappetti+ (2018).
J2343.9 + 0546	1RXS J234354.4 + 054713	355.9835	+5.7841	0.131	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J2345.2 − 1555	PMN J2345 − 1555	356.3019	−15.9188	0.621	Healey+ (2008)	FSRQ	CLAGN	0	Changing SED, Ghisellini+ (2013)
J2346.7 + 0705	TXS 2344 + 068	356.6664	+7.0852	0.172	Paiano+ (2017)	bll	BLLAC	0	SDSS
J2346.7 + 8008	WN B2344.2 + 7951	356.6067	+80.1320	-	-	bll	BLLAC	2	Healey+ (2008)
J2348.0 − 1630	PKS 2345 − 16	357.0109	−16.5200	0.576	Murdoch+ (1984)	fsrq	FSRQ	0	Borderline FSRQ/NLS1, FWHM(Hβ)$\sim$ 34 − 36 Å $\sim$ 2100 − 2200 km/s (see also Jackson+Browne 1991)
J2348.1 − 4934	PKS 2346 − 498	357.3556	−49.5407	0.184	Table A2	bcu	UNCL	1	-
J2348.3 − 6049	PKS 2345 − 611	357.1084	−60.8222	0.707	Table A2	bcu	UNCL	1	-
J2349.2 + 4535	TXS 2346 + 453	357.3376	+45.5945	0.819	Table A2	bcu	BLLAC	1	Peña-Herazo+ (2021)
J2349.4 + 0534	TXS 2346 + 052	357.3377	+5.5777	0.419	Sbarufatti+ (2009)	fsrq	CLAGN	0	The same paper describes the change in the optical spectrum
J2350.6 − 3005	LEDA 3231681	357.6429	−30.1012	0.233	Colless+ (2001)	bll	BLLAC	0	-
J2350.9 − 1416	NVSS J235111 − 141557	357.7963	−14.2664	0.127	Table A2	bcu	BLLAC	1	6dF
J2351.3 − 7559	SUMSS J235115 − 760012	357.8172	−76.0043	0.245	Table A2	bll	UNCL	1	-
J2352.0 + 1750	CLASS J2352 + 1749	358.0243	+17.8205	0.448	Table A2	bll	BLLAC	1	Massaro+ (2015)
J2352.9 + 3031	MG3 J235254 + 3030	358.2279	+30.5060	0.876	SDSS	bcu	FSRQ	0	-
J2353.1 − 4806	2MASS J23531112 − 4806045	358.2963	−48.1012	0.250	Table A2	bcu	UNCL	1	-
J2353.5 − 1457	1REX J235320 − 1458.9	358.3379	−14.9825	0.623	Table A2	bll	UNCL	1	-
J2353.7 − 3037	PKS 2351 − 309	358.4477	−30.6301	0.737	Shaw+ (2013)	bll	BLLAC	0	-
J2353.8 − 3911	NVSS J235342 − 391442	358.4292	−39.2456	0.446	Table A2	bcu	UNCL	1	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2354.1 + 2720	NVSS J235402 + 272328	358.5092	+27.3910	0.722	Table A2	bll	BLLAC	1	SDSS
J2354.1 − 0958	PMN J2354 − 0957	358.5231	−9.9636	0.272	Drinkwater+ (2018)	fsrq	AMB	0	Neither the spectrum, nor a classification was published. The redshift is based on the detection of one line identified as [OII], which suggests a BLLAC identification, although the LAT spectrum is rather soft. Massaro+ (2015) classified it as FSRQ with $z = 0.989$, but no other information is given.
J2354.6 + 4554	4C +45.51	358.5903	+45.8845	1.99	Stickel+Kühr (1993)	fsrq	FSRQ	0	The featureless object observed by Peterson+ (1978) is $\sim 14''$ distant from the radio position
J2354.9 + 8151	S5 2353 + 81	359.0950	+81.8812	1.34	Vermeulen+ (1996)	fsrq	FSRQ	0	The early classification as featureless BL Lac object made by Stickel+Kühr (1993) was due to a low S/N spectrum. The emission features in Vermeulen's spectrum are visible also in the Stickel+Kühr's one.
J2355.7 − 3351	NVSS J235538 − 335225	358.9110	−33.8741	0.9	Table A2	bcu	UNCL	1	Steep radio spectrum ($\alpha \sim -0.63$), classified as radiogalaxy by Zanichelli+ (2001)
J2356.2 + 4036	NVSS J235612 + 403648	359.0531	+40.6131	0.0937	Table A2	bll	BLLAC	1	Two values of redshift were proposed, but none is convincing. Ackermann+ (2011) reported $z = 0.331$ (spectrum not shown), while Massaro+ (2015) measured $z = 0.131$ on the basis of an almost featureless spectrum. LAMOST inconclusive
J2357.0 − 4840	PKS 2354 − 489	359.3376	−48.6384	0.554	Table A2	bcu	UNCL	1	-
J2357.4 − 0152	PKS 2354 − 021	359.3547	−1.8710	0.812	Sbarufatti+ (2005)	bll	BLLAC	0	-
J2357.4 − 1718	RBS 2066	359.3749	−17.3009	2.33	Table A2	bll	BLLAC	1	Sbarufatti+ (2009)
J2357.8 − 5311	PKS 2355 − 534	359.4719	−53.1871	1.01	Jauncey+ (1984)	fsrq	FSRQ	0	-
J2358.0 − 4601	PKS 2355 − 461	359.5089	−45.9219	0.444	Healey+ (2008)	bcu	FSRQ	0	-
J2358.1 − 2853	PMN J2358 − 2853	359.5707	−28.8928	0.891	Table A2	bcu	UNCL	1	Classified as radiogalaxy by Zanichelli+ (2001)
J2358.3 + 3830	B3 2355 + 382	359.6049	+38.4824	0.200	Marchesi+ (2018)	bll	SEY	0	The better spectrum by Paiano+ (2019) displays several narrow emission lines, typical of Seyfert 2 galaxies. Flat radio spectrum
J2358.3 − 1021	PKS 2355 − 106	359.5453	−10.3357	1.64	Wilkes+ (1983)	fsrq	FSRQ	0	SDSS
J2358.5 − 1808	1RXS J235836.3 − 180701	359.6535	−18.1215	1.17	Table A2	bll	BLLAC	1	Paiano+ (2019).
J2359.0 + 3922	B2 2356 + 39	359.7494	+39.3745	1.20	Vermeulen+ (1995)	fsrq	FSRQ	0	-
J2359.0 − 3038	H 2356 − 309	359.7829	−30.6280	0.165	Falomo (1991)	bll	BLLAC	0	-

Table A1. *Cont.*

4FGL Name	4FGL Counterpart	RA	DEC	z	Reference for z	Cl	R-Cl	zFlag	Notes
J2359.3 + 0215	1RXS J235916.9 + 021505	359.8210	+2.2556	0.877	Table A2	bcu	BLLAC	1	SDSS
J2359.3 − 2049	TXS 2356 − 210	359.8314	−20.7989	0.0960	McCarthy+ (1996)	bll	BLLAC	0	-
J2359.9 − 3736	NVSS J000008 − 373819	0.0351	−37.6391	0.257	Table A2	bcu	UNCL	1	Classified as radiogalaxy by Zanichelli+ (2001)

Table A2. This table reports the photometric redshifts calculated as unweighted arithmetic mean $< z_{\rm ph} >$ of the number N of photo-redshifts collected from the literature. σ is the population standard deviation calculated according to $\sigma_{\rm pop} = \sigma\sqrt{N/(N-1)}$ for $N \geq 3$. If $N = 2$, then $\sigma = 0.667|z_{\rm ph,1} - z_{\rm ph,2}|$. If $N = 1$, then σ is undefined. The references are indicated in the last column and are: (1) DiPompeo+ (2015); (2) Yang+Shen (2022); (3) Kunsági-Máté+ (2022); (4) Flesch (2021); (5) Bilicki+ (2014); (6) Bilicki+ (2016); (7) Ahumada+ (2020); (8) Brescia+ (2014); (9) Gao+ (2018); (10) Lopes (2007); (11) Beck+ (2021); (12) Zou+ (2022), with 12a = DES DR2; 12b = DESI DR9; 12c = HSC SSP PDR3; (13) Zhou+ (2022)—from NOIRlab. The first four columns reported the 4FGL name, right ascension and declination of the optical counterpart (see Section 3 in case of discrepancies with Table A1), and the revised classification as from Table A1.

4FGL Name	RA	DEC	R-Class	$<z_{\rm ph}>$	σ	N	References
J0001.2+4741	0.3293	47.7002	UNCL	0.545	0.005	2	3,6
J0001.2−0747	0.3251	−7.7741	BLLAC	0.382	0.335	2	3,13
J0001.5+2113	0.3849	21.2267	NLS1	0.380	0.351	4	1,3,12b,13
J0001.6−4156	0.3865	−41.9237	UNCL	0.290	0.223	3	2,12a,13
J0002.1−6728	0.5633	−67.4482	BLLAC	0.220	-	1	6
J0002.3−0815	0.6503	−8.2590	UNCL	0.545	0.244	4	1,3,4,13
J0002.4−5156	0.6217	−51.8743	UNCL	0.717	0.471	4	2,4,6,13
J0003.1−5248	0.8317	−52.7909	UNCL	0.309	0.136	4	2,4,12a,13
J0003.3−1928	0.8278	−19.4562	UNCL	0.711	0.216	3	1,3,4
J0003.3−5905	0.8055	−59.0966	UNCL	0.636	0.218	2	2,13
J0003.9−1149	1.0205	−11.8162	BLLAC	0.519	0.280	2	3,13
J0004.0+0840	0.9968	8.6939	BLLAC	1.362	0.693	3	1,3,13
J0004.3+4614	1.0672	46.2550	FSRQ	1.622	-	1	3
J0004.4−4737	1.1486	−47.6054	FSRQ	0.615	0.287	2	2,13
J0005.9+3824	1.4882	38.3375	FSRQ	0.273	0.071	2	3,6
J0006.3−0620	1.5579	−6.3931	BLLAC	0.391	0.296	5	2,3,6,12a,13
J0006.4+0135	1.6122	1.6029	BLLAC	0.655	0.414	6	1,2,3,6,12c,13
J0007.7+4008	1.9236	40.1416	UNCL	-	-	-	
J0008.0+4711	1.9999	47.2022	BLLAC	2.324	-	1	3
J0008.0−3937	2.0383	−39.7564	UNCL	1.330	0.375	3	2,4,13
J0008.4+1455	2.1058	14.9433	UNCL	1.075	-	1	13
J0008.4−2339	2.1475	−23.6578	BLLAC	0.150	-	1	6
J0009.1+0628	2.2664	6.4726	BLLAC	0.682	0.428	3	1,3,13
J0009.3+5030	2.3448	50.5080	BLLAC	0.590	0.386	2	3,4
J0009.7−3217	2.3982	−32.2769	MIS	0.017	0.001	5	5,6,12a,12b,13
J0009.8+1340	2.4884	13.6830	UNCL	0.471	0.178	3	1,4,13
J0009.8−4317	2.4573	−43.2806	BLLAC	0.200	0.060	3	2,6,13
J0010.6+2043	2.6198	20.7972	FSRQ	0.759	0.209	3	1,3,13
J0010.6−3025	2.6489	−30.4632	FSRQ	0.648	0.265	2	2,13
J0010.8−2154	2.7235	−21.9512	UNCL	1.169	-	1	3
J0011.4+0057	2.8767	0.9644	FSRQ	0.734	0.408	5	1,2,3,12c,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0011.4−4110	2.9683	−41.0959	UNCL	0.834	0.221	2	2,13
J0011.8−3142	2.9239	−31.7058	UNCL	0.944	0.075	2	2,13
J0013.1−3955	3.2496	−39.9072	BLLAC	0.435	0.046	2	2,13
J0013.4+0950	3.3700	9.8251	UNCL	0.226	0.068	7	4,6,7,8,9,12b,13
J0013.6+4051	3.3797	40.8603	MIS	0.211	0.027	2	3,6
J0013.6−0424	3.4755	−4.3979	FSRQ	0.810	0.454	5	1,2,3,12a,13
J0013.9−1854	3.4835	−18.9019	BLLAC	0.059	0.013	3	5,6,11
J0014.1+1910	3.4849	19.1783	BLLAC	0.809	0.380	2	3,13
J0014.1−5022	3.5478	−50.3764	BLLAC	0.176	-	1	13
J0014.2+0854	3.5822	8.9006	CLAGN	0.138	0.022	8	5,6,7,8,9,11,12b,13
J0014.3−0500	3.5851	−4.9913	FSRQ	0.699	0.240	4	1,2,3,13
J0014.9+3212	3.7756	32.2704	UNCL	0.414	0.186	5	6,7,8,9,13
J0015.2+3537	3.8662	35.6108	BLLAC	0.491	0.167	3	1,3,6
J0015.9+2440	4.0151	24.6707	BLLAC	0.485	0.471	2	3,13
J0016.2−0016	4.0462	−0.2535	FSRQ	0.742	0.427	5	1,2,3,6,13
J0016.5+1702	3.9166	17.0113	FSRQ	0.771	0.188	3	1,3,13
J0017.0−0649	4.2891	−6.8426	UNCL	0.357	0.161	5	1,2,3,4,13
J0017.5−0514	4.3992	−5.2116	FSRQ	0.257	0.137	4	2,3,6,13
J0017.8+1455	4.4038	14.8505	BLLAC	0.557	0.585	3	3,6,13
J0018.4+2946	4.6158	29.7920	BLLAC	0.642	0.743	4	1,3,4,13
J0019.2−5640	4.8609	−56.6951	UNCL	0.522	0.172	2	12a,13
J0019.3−8152	4.8360	−81.8809	BLLAC	-	-	-	
J0019.6+2022	4.9077	20.3627	BLLAC	0.775	0.108	3	1,3,13
J0019.6+7327	4.9408	73.4583	FSRQ	1.595	-	1	3
J0021.0+0322	5.2094	3.3995	UNCL	0.652	0.406	4	1,2,3,13
J0021.5−2552	5.3856	−25.8471	BLLAC	0.390	0.270	4	2,3,6,13
J0021.6−0855	5.4260	−9.0123	BLLAC	0.436	0.105	3	1,8,13
J0021.9−5140	5.5003	−51.6734	BLLAC	0.233	0.089	2	2,13
J0022.0+0006	5.5040	0.1161	BLLAC	0.213	0.048	9	6,7,8,9,11,12a,12b,12c,13
J0022.1−1854	5.5386	−18.8930	BLLAC	0.856	-	1	3
J0022.5+0608	5.6352	6.1345	BLLAC	0.544	0.370	3	1,3,13
J0023.7+4457	5.8977	44.9433	FSRQ	1.092	-	1	3
J0023.7−6820	6.0280	−68.3485	MIS	0.177	-	1	6
J0023.9+1603	6.0053	16.0428	BLLAC	0.732	0.380	4	1,3,6,13
J0024.4+4647	6.0897	46.7351	UNCL	1.437	0.083	2	3,4
J0024.7+0349	6.1884	3.8177	FSRQ	0.574	0.158	5	1,3,12a,12b,13
J0025.2−2231	6.3510	−22.4632	FSRQ	0.940	-	1	3
J0025.7−4801	6.4409	−48.0653	UNCL	0.554	0.283	2	12a,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0026.6−4600	6.6475	−46.0197	BLLAC	-	-	-	
J0028.1+7505	7.0544	75.1036	UNCL	1.001	-	1	3
J0028.4+2001	7.1242	20.0074	FSRQ	0.555	0.453	3	1,3,13
J0028.8−0112	7.2541	−1.2283	SEY	0.062	0.020	10	5,6,7,8,9,10,11,12a,12b,13
J0028.9+3553	7.2165	35.8433	UNCL	0.582	0.174	2	1,3
J0029.0−7044	7.1732	−70.7544	BLLAC	-	-	-	
J0029.4+2051	7.3692	20.8927	UNCL	0.257	0.056	6	6,7,8,9,12b,13
J0030.2−1647	7.5852	−16.7870	BLLAC	1.954	-	1	3
J0030.3−4224	7.5729	−42.4129	FSRQ	0.321	0.156	3	2,6,13
J0030.6−0212	7.6326	−2.1989	FSRQ	0.751	0.619	4	1,2,3,13
J0031.3+0726	7.8321	7.4149	BLLAC	0.828	0.926	2	3,13
J0032.3−5522	8.0455	−55.3744	UNCL	1.191	0.161	2	12a,13
J0032.4−2849	8.1379	−28.8223	BLLAC	0.169	0.040	7	2,3,6,11,12a,12b,13
J0033.3−2040	8.3436	−20.6523	BLLAC	0.073	0.018	7	5,6,7,8,11,12b,13
J0033.5−1921	8.3933	−19.3592	BLLAC	0.936	-	1	3
J0033.9+3858	8.5100	39.0104	UNCL	0.743	0.443	3	1,3,4
J0034.0−4116	8.5184	−41.2721	UNCL	1.145	0.647	3	2,4,13
J0035.0−5728	8.7644	−57.4356	UNCL	0.272	0.115	4	2,4,6,13
J0035.2+1514	8.8114	15.2512	BLLAC	0.722	0.928	2	11,13
J0035.8−0837	8.9427	−8.5983	UNCL	0.965	0.290	4	1,3,4,13
J0036.9+1832	9.2475	18.5343	FSRQ	1.453	0.544	3	1,3,13
J0037.6+3653	9.4423	36.9864	FSRQ	0.207	0.070	5	3,6,7,8,11
J0037.8+1239	9.4620	12.6389	BLLAC	0.062	0.015	8	5,6,7,8,9,11,12b,13
J0037.9+2612	9.3298	26.2201	FSRQ	0.122	0.025	8	5,6,7,8,9,11,12b,13
J0038.1+0012	9.5355	0.2268	BLLAC	0.532	0.292	4	1,2,3,13
J0038.2−2459	9.5614	−24.9840	FSRQ	1.141	0.805	4	2,3,12b,13
J0038.7−0204	9.5855	−2.1279	MIS	0.199	0.036	9	2,3,6,7,8,9,12a,12b,13
J0039.0−0946	9.7762	−9.7130	FSRQ	0.725	0.268	3	1,3,13
J0039.1+4330	9.7840	43.5041	UNCL	0.541	0.173	3	3,4,6
J0039.1−2219	9.7842	−22.3337	BLLAC	0.053	0.011	8	5,6,7,8,11,12a,12b,13
J0040.3+4050	10.0575	40.8346	BLLAC	0.295	0.127	2	4,6
J0040.4−2340	10.1038	−23.6669	BLLAC	0.178	0.044	9	2,3,6,7,8,11,12a,12b,13
J0040.9+3203	10.3164	32.1854	FSRQ	0.573	0.235	7	3,7,8,9,11,12b,13
J0041.4+3800	10.3460	37.9822	FSRQ	1.110	1.004	2	1,3
J0041.9−4702	10.4459	−47.0269	BLLAC	0.138	0.029	5	5,6,12a,12b,13
J0042.0+3640	10.5333	36.6867	BLLAC	0.524	-	1	3
J0042.2+2319	10.5189	23.3336	FSRQ	0.791	0.301	3	1,3,13
J0043.5−0442	10.8922	−4.7168	BLLAC	1.419	1.137	4	1,2,3,13
J0043.6+2223	10.8905	22.3963	BLLAC	0.604	0.115	3	1,3,13
J0043.7−1116	10.9528	−11.2687	BLLAC	0.957	1.083	2	3,13
J0043.8+3425	10.9535	34.4406	FSRQ	0.928	0.658	2	1,3
J0044.2−8424	11.1112	−84.3778	FSRQ	0.548	-	1	6
J0045.1−3706	11.3003	−37.0968	FSRQ	0.493	0.397	3	2,4,13
J0045.3+2128	11.3304	21.4611	BLLAC	0.115	-	1	13
J0045.7+1217	11.4306	12.2866	BLLAC	0.163	0.051	3	3,6,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0047.1−6203	11.8551	−62.1274	UNCL	-	-	-	
J0047.9+2233	12.0109	22.5900	FSRQ	1.195	0.595	3	1,3,13
J0047.9+3947	11.9801	39.8160	BLLAC	0.155	0.029	4	5,6,7,8
J0048.6−2427	12.1541	−24.4482	UNCL	0.365	0.378	4	2,3,4,13
J0049.0+2252	12.2557	22.8876	MIS	0.200	0.028	7	6,7,8,9,11,12b,13
J0049.1+4223	12.2465	42.3975	BLLAC	0.295	0.052	2	7,8
J0049.4−5402	12.4535	−54.0454	BLLAC	0.168	0.043	2	2,13
J0049.5−4150	12.4123	−41.8604	UNCL	0.286	0.079	5	4,6,12a,12b,13
J0049.6−4500	12.3193	−44.9531	SEY	0.255	0.311	6	2,5,6,12a,12b,13
J0049.7+0237	12.4301	2.6177	BLLAC	0.823	0.491	4	1,2,3,13
J0050.0−5736	12.4978	−57.6409	FSRQ	0.149	0.025	3	2,6,13
J0050.4−0452	12.5897	−4.8724	FSRQ	0.542	0.147	4	1,3,12a,13
J0050.7−0929	12.6722	−9.4848	BLLAC	0.020	-	1	13
J0051.1−0648	12.7842	−6.8340	FSRQ	0.767	0.379	4	1,3,6,13
J0051.2−6242	12.8194	−62.7012	BLLAC	0.168	0.101	3	2,4,13
J0051.5−4220	12.7896	−42.4426	FSRQ	0.780	0.654	3	2,6,13
J0052.9−6644	13.2167	−66.6880	MIS	-	-	-	
J0054.4+8627	13.1369	86.4623	UNCL	0.894	0.476	3	3,4,6
J0054.7−2455	13.6948	−24.9248	BLLAC	0.314	0.275	3	2,6,13
J0054.8−1954	13.6373	−19.8836	UNCL	1.075	0.325	3	2,3,13
J0055.1−1219	13.7991	−12.2992	UNCL	1.343	0.381	2	3,13
J0056.3−0935	14.0837	−9.6083	MIS	0.051	0.014	9	5,6,7,8,9,10,11,12b,13
J0056.4−2118	14.1345	−21.2856	BLLAC	0.442	0.302	3	2,3,13
J0056.5−3936	14.0838	−39.6957	AMB	0.223	0.020	5	5,6,12a,12b,13
J0056.6−4452	14.1911	−44.8506	BLLAC	0.386	0.181	2	2,13
J0056.6−5317	14.0888	−53.3131	UNCL	0.317	0.161	3	2,4,13
J0056.8+1626	14.2304	16.4204	BLLAC	0.521	0.364	3	1,3,13
J0057.0+4101	14.2676	40.9987	UNCL	0.558	0.332	3	1,3,4
J0057.3+2216	14.3888	22.3115	BLLAC	0.707	0.346	5	3,7,8,9,13
J0057.7+3023	14.4537	30.3524	MIS	0.011	0.004	6	5,6,9,11,12b,13
J0058.0−0539	14.5211	−5.6645	FSRQ	0.821	0.544	4	1,2,3,13
J0058.0−3233	14.5093	−32.5724	BLLAC	0.321	0.240	2	2,13
J0058.3+1723	14.5699	17.3871	UNCL	0.286	0.077	6	4,7,8,9,12b,13
J0058.4+3315	14.6336	33.1881	FSRQ	0.881	0.630	2	1,3
J0059.2+0006	14.7730	0.1143	FSRQ	0.488	0.323	3	2,3,13
J0059.3−0152	14.8205	−1.8382	BLLAC	0.126	0.035	9	5,6,7,8,9,11,12a,12b,13
J0059.5−3338	15.0391	−33.6255	FSRQ	0.155	0.111	3	2,12a,13
J0059.5−3512	14.8811	−35.1803	BLLAC	0.284	0.147	4	2,4,6,13
J0100.3+0745	15.0866	7.7643	BLLAC	0.983	0.916	2	3,13
J0101.0−0059	15.2425	−0.9299	BLLAC	0.545	0.220	4	1,2,3,13
J0101.7−5455	15.4242	−54.9306	BLLAC	-	-	-	
J0101.8−7543	15.5778	−75.7810	FSRQ	-	-	-	
J0102.0+1639	15.4905	16.6614	UNCL	0.549	0.221	5	1,3,4,6,13
J0102.4+0942	15.5713	9.7360	BLLAC	0.306	0.228	2	1,13
J0102.4+4214	15.6131	42.2386	NLS1	0.458	0.015	2	1,3

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0102.6−5639	15.5436	−56.6179	UNCL	0.387	0.037	2	6,13
J0102.7−2001	15.7123	−20.0329	BLLAC	0.191	0.023	5	6,11,12a,12b,13
J0103.1+4954	15.8154	49.9912	UNCL	0.833	0.177	2	3,4
J0103.5+1526	15.8583	15.4402	BLLAC	0.175	0.026	9	5,6,7,8,9,10,11,12b,13
J0103.8+1321	15.9406	13.3959	BLLAC	0.299	0.209	2	1,13
J0104.8−2416	16.2425	−24.2746	FSRQ	1.101	0.476	3	2,3,13
J0105.1+3929	16.2883	39.4709	BLLAC	1.254	-	1	3
J0106.9−4832	16.7320	−48.5248	UNCL	0.662	0.096	3	12a,12b,13
J0107.3−1210	16.7991	−12.1898	BLLAC	0.307	0.147	5	3,6,11,12b,13
J0107.4+0334	16.8690	3.5635	BLLAC	0.870	0.419	5	1,3,6,12b,13
J0108.1−0039	17.1118	−0.6234	FSRQ	1.003	0.686	3	2,3,13
J0108.6+0134	17.1615	1.5834	FSRQ	0.507	0.342	3	2,3,13
J0109.1+1815	17.2841	18.2688	BLLAC	0.279	0.243	2	3,13
J0109.3+2401	17.3111	24.0096	BLLAC	0.413	0.145	5	1,3,6,12b,13
J0110.0−4019	17.4858	−40.3475	BLLAC	0.166	0.041	5	2,6,12a,12b,13
J0110.2+4151	17.5201	41.8308	BLLAC	0.077	0.021	5	5,6,7,8,11
J0110.7−1254	17.7083	−12.9177	BLLAC	0.152	0.020	4	6,11,12b,13
J0111.4+0534	17.8758	5.6076	BLLAC	0.271	0.126	7	3,6,7,8,9,12b,13
J0111.5−2546	17.8781	−25.7587	UNCL	1.466	0.632	3	3,4,13
J0112.0−6634	18.0788	−66.5792	FSRQ	-	-	-	
J0112.1+2245	18.0243	22.7441	BLLAC	0.592	0.740	2	3,13
J0112.1−0321	18.1631	−3.4786	FSRQ	0.648	0.125	5	1,2,3,12a,13
J0112.6−3158	18.1365	−32.0284	BLLAC	0.582	0.161	4	2,4,12a,13
J0112.8+3208	18.2097	32.1382	FSRQ	0.714	0.871	2	3,13
J0112.8−7506	18.1307	−75.1050	UNCL	0.300	-	1	4
J0113.1−3553	18.3161	−35.8634	FSRQ	0.389	0.386	2	2,13
J0113.4+4948	18.3625	49.8067	FSRQ	0.624	0.433	2	3,6
J0113.7+0225	18.4298	2.3715	BLLAC	0.037	0.005	9	5,6,7,8,9,11,12a,12b,13
J0114.8+1326	18.7199	13.4271	BLLAC	0.722	0.832	3	3,6,13
J0114.9−3400	18.7572	−34.0076	BLLAC	0.214	0.069	5	2,6,12a,12b,13
J0115.1+2622	18.7143	26.3893	BLLAC	1.150	0.821	4	1,3,4,13
J0115.1−0129	18.8212	−1.4513	FSRQ	0.895	0.612	3	2,3,13
J0115.6+0356	18.9188	3.9454	BLLAC	0.483	0.545	3	2,3,13
J0115.8+2519	18.9423	25.3315	BLLAC	0.523	0.437	3	3,6,13
J0116.0−1136	19.0522	−11.6043	FSRQ	0.469	0.411	3	3,6,13
J0116.0−2745	18.9811	−27.7422	BLLAC	0.432	0.264	3	2,3,13
J0116.2−6153	19.0817	−61.8954	BLLAC	0.170	0.041	2	2,13
J0116.5−2812	19.1544	−28.1964	BLLAC	0.296	0.199	6	2,4,6,12a,12b,13
J0116.5−3046	18.9438	−30.8221	FSRQ	1.014	0.449	2	2,13
J0117.5−2442	19.4458	−24.7258	BLLAC	0.229	0.023	5	6,11,12a,12b,13
J0117.8−2109	19.4533	−21.1852	FSRQ	0.923	0.237	3	3,12a,13
J0118.7−0848	19.6841	−8.8497	UNCL	1.645	0.470	4	1,3,4,13
J0118.9−2141	19.7386	−21.6917	FSRQ	0.425	0.440	2	3,13
J0119.0−1458	19.7692	−14.9830	BLLAC	0.187	0.082	3	2,4,13
J0119.4−5354	19.9602	−53.9550	UNCL	0.639	0.064	3	2,4,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0119.6+4158	20.0115	42.0039	BLLAC	0.115	0.027	4	3,5,6,11
J0119.9+4053	20.0802	40.8914	UNCL	1.191	0.656	2	1,4
J0120.4−2701	20.1319	−27.0235	BLLAC	0.408	0.330	3	2,3,13
J0121.7+5153	20.3905	51.9310	UNCL	0.839	0.319	2	3,4
J0121.8−3916	20.4696	−39.2623	BLLAC	0.191	0.084	5	4,6,12a,12b,13
J0122.1−3004	20.5150	−30.0854	UNCL	0.567	0.025	2	12a,13
J0123.1+3421	20.7860	34.3469	BLLAC	0.197	0.090	4	6,7,8,9
J0123.7−2311	20.9098	−23.1830	BLLAC	0.151	0.026	5	2,6,12a,12b,13
J0124.8−0625	21.2104	−6.4169	BLLAC	0.485	0.112	5	1,2,3,6,13
J0125.3−2548	21.3285	−25.8179	BLLAC	1.240	0.781	3	2,3,13
J0125.4+3200	21.4293	31.8873	UNCL	1.265	-	1	13
J0125.7−0015	21.3215	−0.3080	FSRQ	1.536	0.995	5	1,2,3,6,13
J0126.0−2221	21.5625	−22.3760	FSRQ	0.540	0.457	4	1,2,3,13
J0126.5−1553	21.7854	−15.9317	UNCL	0.989	0.170	4	2,3,4,13
J0127.1+3310	21.7383	33.1250	BLLAC	0.524	0.153	4	1,3,4,13
J0127.2+0324	21.8081	3.3835	BLLAC	0.284	0.095	3	2,6,13
J0127.2−0819	21.8180	−8.3580	BLLAC	0.419	0.226	4	1,3,8,13
J0127.4−4813	21.8118	−48.2256	UNCL	0.866	-	1	13
J0127.9+4857	22.0336	49.0183	AMB	0.051	0.010	6	3,5,6,7,8,11
J0128.5+4440	22.1722	44.6550	FSRQ	0.398	0.082	5	3,6,7,8,11
J0129.7+3436	22.4311	34.6163	AMB	0.691	0.282	3	1,3,6
J0129.8+1440	22.4806	14.7800	FSRQ	1.188	0.489	3	1,3,13
J0130.6+1844	22.6277	18.7227	BLLAC	0.768	0.356	3	1,3,13
J0132.7−0804	23.1714	−8.0680	SEY	0.101	0.020	9	5,6,7,8,9,11,12a,12b,13
J0132.7−1654	23.1812	−16.9135	FSRQ	1.185	0.814	3	2,3,13
J0132.8+4324	23.1839	43.4257	BLLAC	1.196	0.529	4	1,3,4,6
J0132.8−4413	23.2765	−44.2393	BLLAC	0.151	0.042	4	2,12a,12b,13
J0133.1−5201	23.2740	−52.0011	FSRQ	0.043	-	1	13
J0133.2−4533	23.2887	−45.5900	UNCL	0.682	0.475	4	2,6,12a,13
J0134.3−3842	23.6335	−38.7259	FSRQ	0.539	0.682	2	2,13
J0134.5+2637	23.6175	26.6453	CLAGN	1.173	1.546	2	3,13
J0135.1+0255	23.7793	2.9285	BLLAC	0.301	0.065	7	6,7,8,9,12a,12b,13
J0136.5+3906	24.1358	39.0998	BLLAC	-	-	-	
J0137.0+4751	24.2441	47.8581	FSRQ	0.840	-	1	3
J0137.6−2430	24.4098	−24.5150	FSRQ	0.582	0.327	3	2,3,13
J0138.0+2247	24.5048	22.8024	BLLAC	0.715	0.878	5	1,3,4,6,13
J0138.5−4613	24.6418	−46.2376	BLLAC	0.076	0.017	5	5,6,12a,12b,13
J0139.0+2601	24.7464	26.0044	BLLAC	0.635	0.495	3	1,3,13
J0140.6+8736	24.8016	87.6327	UNCL	0.777	0.590	3	3,4,6
J0140.6−0758	25.1704	−7.9803	BLLAC	0.301	0.117	5	1,2,6,12a,13
J0141.4−0928	25.3576	−9.4788	BLLAC	1.167	1.133	4	2,3,4,13
J0142.7−0543	25.6620	−5.7338	BLLAC	0.377	0.224	5	1,2,3,6,13
J0143.1−3622	25.7865	−36.3829	UNCL	0.865	-	1	13
J0143.5−3156	25.7922	−32.0157	FSRQ	0.386	0.076	5	2,6,12a,12b,13
J0143.7−5846	25.9476	−58.7643	BLLAC	0.027	-	1	13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0144.6+2705	26.1398	27.0842	BLLAC	0.675	0.677	2	3,13
J0145.0−2732	26.2641	−27.5595	FSRQ	0.539	0.431	4	2,3,6,13
J0145.9+2319	26.4704	23.3220	BLLAC	0.922	0.266	3	1,3,13
J0146.0−6746	26.4784	−67.7803	BLLAC	0.229	-	1	6
J0146.3+4606	26.6105	46.1050	UNCL	0.592	0.255	3	3,4,6
J0146.9−5202	26.7024	−52.0427	BLLAC	0.060	0.009	5	5,6,12a,12b,13
J0148.6+0127	27.1408	1.4837	BLLAC	0.483	0.199	4	1,2,3,13
J0149.6−0734	27.3918	−7.5548	UNCL	0.722	0.209	5	1,2,3,4,13
J0150.6−5448	27.6856	−54.8347	UNCL	0.188	0.074	5	2,4,6,12a,13
J0151.0+0539	27.7577	5.6761	BLLAC	0.610	0.324	4	1,3,4,13
J0151.3+8601	27.3969	86.0210	BLLAC	0.168	0.062	3	3,6,11
J0151.4−3607	27.8643	−36.1049	UNCL	0.198	0.072	3	2,4,13
J0152.2+2206	28.0752	22.1188	FSRQ	0.898	0.294	3	1,3,13
J0152.2+3714	28.0509	37.2682	UNCL	0.550	0.067	2	3,4
J0152.6+0147	28.1650	1.7882	BLLAC	0.043	0.008	8	5,6,7,8,9,12a,12b,13
J0153.0+7517	28.2808	75.2953	UNCL	2.353	-	1	3
J0153.5−5107	28.5821	−51.1310	FSRQ	0.992	0.745	2	2,13
J0153.9+0823	28.5115	8.3975	BLLAC	0.560	0.594	2	3,13
J0154.3−0236	28.5950	−2.5816	BLLAC	0.060	0.009	9	5,6,7,8,9,11,12a,12b,13
J0155.0+4433	28.7269	44.5605	BLLAC	0.856	-	1	3
J0155.4−0625	28.9721	−6.3595	UNCL	0.437	0.274	7	1,2,3,4,6,12c,13
J0156.1+1502	29.0004	15.0370	BLLAC	0.925	0.508	3	1,3,13
J0156.5+3914	29.1309	39.2419	FSRQ	0.629	0.305	2	3,6
J0156.6−1758	29.1531	−18.0172	UNCL	0.261	0.064	8	2,3,4,6,11,12a,12b,13
J0156.8−4744	29.1918	−47.7381	UNCL	0.117	0.023	2	2,13
J0156.9+4648	29.2274	46.8085	UNCL	0.972	0.229	2	3,4
J0156.9−5301	29.2417	−53.0333	BLLAC	0.160	0.035	5	2,6,12a,12b,13
J0157.7−4614	29.4630	−46.2398	FSRQ	1.183	0.508	3	2,12b,13
J0158.5−3932	29.6588	−39.5344	BLLAC	0.234	0.089	2	2,13
J0158.8+0101	29.7199	1.0258	BLLAC	0.490	0.233	6	1,2,3,8,12c,13
J0159.3−4523	29.7780	−45.2606	UNCL	0.812	0.283	2	2,13
J0159.5+1046	29.8933	10.7849	BLLAC	0.120	0.013	3	5,6,13
J0159.7−2740	29.9306	−27.6773	BLLAC	0.453	0.446	3	2,3,13
J0200.3−4109	30.0875	−41.1601	BLLAC	0.279	0.015	3	2,6,13
J0200.6−6637	30.2823	−66.6369	FSRQ	-	-	-	
J0201.1+0036	30.2757	0.5667	BLLAC	0.157	0.062	8	6,7,8,9,12a,12b,12c,13
J0201.1−4347	30.2955	−43.7820	UNCL	0.610	0.076	5	2,4,12a,12b,13
J0202.4+0849	30.6101	8.8205	BLLAC	0.530	0.093	3	1,3,13
J0202.6−0258	30.6664	−3.0355	FSRQ	1.047	0.223	4	1,2,3,13
J0202.7+4204	30.6819	42.0879	BLLAC	1.527	-	1	3
J0202.9−0225	30.7176	−2.3891	UNCL	0.142	0.082	5	4,11,12a,12c,13
J0203.6+7233	30.8891	72.5482	BLLAC	-	-	-	
J0203.7+3042	30.9345	30.7105	FSRQ	0.703	0.229	3	1,3,13
J0204.0−3334	31.0533	−33.5614	BLLAC	0.477	0.101	3	6,12a,13
J0204.1−2919	31.0440	−29.3845	UNCL	0.740	0.122	5	3,4,12a,12b,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0204.3+2417	31.0898	24.2974	BLLAC	0.174	0.028	8	5,6,7,8,9,11,12b,13
J0204.8+1513	31.2101	15.2364	FSRQ	0.779	0.097	3	11,12b,13
J0205.0−1700	31.2403	−17.0222	FSRQ	0.923	0.711	3	2,3,13
J0205.2+3212	31.2705	32.2084	FSRQ	0.691	0.861	2	3,13
J0206.4−1151	31.6087	−11.8444	FSRQ	0.655	0.336	4	1,2,3,13
J0206.8−5744	31.6704	−57.8303	UNCL	0.189	0.082	2	2,13
J0207.4−3855	31.8150	−38.9509	BLLAC	0.160	0.046	4	2,5,6,13
J0207.5−1049	31.9122	−10.7968	UNCL	0.582	0.166	6	2,3,6,12a,12b,13
J0207.5−2402	31.8892	−24.0339	UNCL	0.596	0.120	4	2,3,4,13
J0208.3−6838	31.9622	−68.6320	BLLAC	-	-	-	
J0208.5−0046	32.1098	−0.7956	BLLAC	0.684	0.236	5	1,2,3,12c,13
J0208.6+3523	32.1590	35.3869	BLLAC	0.538	0.299	2	3,6
J0209.3+4449	32.3214	44.8295	BLLAC	0.268	0.043	2	4,6
J0209.3−5228	32.3401	−52.4897	BLLAC	0.843	1.361	4	2,6,12a,13
J0209.9+7229	32.4658	72.4907	FSRQ	0.101	-	1	6
J0210.1+2518	32.5106	25.2905	UNCL	0.276	0.187	3	1,4,13
J0210.5−1445	32.5966	−14.7497	UNCL	1.112	0.218	2	12a,13
J0210.7−5101	32.6925	−51.0172	FSRQ	0.203	0.129	2	2,13
J0211.1−0646	32.7914	−6.7639	UNCL	1.264	0.030	2	12c,13
J0211.2+1051	32.8049	10.8597	BLLAC	0.299	0.271	3	3,4,13
J0212.2−0219	33.0703	−2.3655	BLLAC	0.169	0.059	7	6,7,8,9,12a,12b,13
J0212.2−2559	33.1230	−25.9718	UNCL	-	-	-	
J0212.4−3502	33.1271	−35.0584	BLLAC	0.235	0.153	2	2,13
J0212.8−2721	33.2302	−27.3052	UNCL	0.566	0.304	4	2,3,4,13
J0212.9+2244	33.2201	22.7478	BLLAC	0.130	0.113	2	6,13
J0213.8−6949	33.4944	−69.8603	UNCL	0.300	-	1	4
J0214.1−4733	33.5409	−47.5431	BLLAC	0.152	0.039	4	6,12a,12b,13
J0214.2−7025	33.5186	−70.4517	UNCL	1.200	-	1	4
J0214.4−5822	33.5433	−58.3686	UNCL	0.174	0.021	7	2,4,5,6,12a,12b,13
J0214.6−4333	33.6648	−43.5581	UNCL	0.450	0.138	4	6,12a,12b,13
J0214.8−6150	33.5675	−61.8260	UNCL	0.735	0.420	2	2,13
J0215.3+7555	33.8246	75.9147	UNCL	0.107	0.068	3	4,5,6
J0215.9+0300	34.0019	3.0033	BLLAC	0.408	0.224	4	1,2,3,13
J0216.5+2313	34.1337	23.2473	BLLAC	0.229	0.150	3	1,6,13
J0216.6−1015	34.1620	−10.2842	UNCL	0.737	0.379	4	1,3,4,13
J0216.8+0510	34.2318	5.1718	BLLAC	1.139	0.513	4	1,2,4,13
J0216.8−6635	34.2120	−66.6118	BLLAC	-	-	-	
J0217.0−0821	34.2611	−8.3479	AMB	0.444	0.218	5	1,2,3,8,13
J0217.2+0837	34.3214	8.6177	BLLAC	0.479	0.539	4	3,4,6,13
J0217.4+7352	34.3784	73.8257	FSRQ	2.388	-	1	3
J0217.8+0144	34.4540	1.7471	CLAGN	0.555	0.537	3	2,3,13
J0218.9+3643	34.7085	36.6785	UNCL	1.075	0.552	3	3,4,6
J0218.9−2305	34.6676	−23.1201	UNCL	0.685	0.120	6	2,3,4,6,12a,13
J0219.0+2443	34.7517	24.7557	BLLAC	0.489	0.476	2	3,13
J0219.1−1724	34.7729	−17.4203	BLLAC	0.113	0.038	6	6,7,8,11,12a,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0219.5+0724	34.8570	7.4596	BLLAC	0.934	0.455	4	1,3,6,13
J0220.2+3246	35.2002	32.6851	FSRQ	2.061	-	1	3
J0220.8−0841	35.2019	−8.7140	BLLAC	0.495	0.484	5	1,2,3,6,13
J0221.1+3556	35.2729	35.9372	FSRQ	0.829	0.413	2	3,6
J0221.2−1312	35.3012	−13.0465	UNCL	0.851	0.165	4	2,3,4,13
J0221.5+2513	35.3624	25.2427	UNCL	0.543	0.247	4	1,3,4,13
J0221.8+3730	35.5644	37.5210	UNCL	0.923	-	1	3
J0222.0−1616	35.5030	−16.2546	FSRQ	0.543	0.064	3	3,6,13
J0222.6+4302	35.6650	43.0355	BLLAC	-	-	-	
J0223.0−3447	35.7350	−34.6913	FSRQ	0.627	0.037	2	2,13
J0223.1−1117	35.8094	−11.2940	BLLAC	0.581	0.529	3	2,3,13
J0223.2−1653	35.9324	−16.9438	FSRQ	0.750	0.507	3	2,3,13
J0223.5+3912	35.8683	39.2142	UNCL	1.225	0.100	2	3,4
J0223.5−0928	35.9201	−9.4226	FSRQ	0.640	0.219	5	1,2,3,12a,13
J0224.0−1850	36.0186	−18.8423	UNCL	-	-	-	
J0224.0−7941	35.9125	−79.6706	UNCL	-	-	-	
J0224.2+0700	36.1185	6.9898	NLS1	0.347	0.202	5	3,7,8,9,13
J0224.2+1616	36.0493	16.2495	UNCL	0.887	1.002	2	3,13
J0224.9+1843	36.2695	18.7802	FSRQ	1.379	1.570	2	3,13
J0225.1−2604	36.2954	−26.0552	UNCL	0.917	0.334	4	3,4,6,13
J0225.6−4502	36.4314	−45.0546	UNCL	0.437	0.105	4	2,6,12b,13
J0225.8+1310	36.4639	13.1796	UNCL	0.466	0.390	4	3,4,6,13
J0226.3−1845	36.6985	−18.7276	FSRQ	1.346	0.506	3	2,3,13
J0226.5+0938	36.6427	9.6456	UNCL	0.788	0.264	2	3,13
J0226.5−4441	36.6620	−44.6896	BLLAC	0.381	0.360	2	2,13
J0226.6−0553	36.6668	−5.8774	UNCL	0.013	-	1	13
J0226.7+2312	36.6303	23.1903	UNCL	0.373	0.087	7	3,6,7,8,9,12b,13
J0227.2+3928	36.7809	39.5282	FSRQ	1.401	-	1	3
J0227.3+0201	36.8191	2.0333	BLLAC	0.355	0.193	6	6,7,8,9,12c,13
J0227.8+2246	36.9348	22.8095	UNCL	0.514	0.157	7	3,4,7,8,9,12b,13
J0228.0−3026	36.9189	−30.4343	FSRQ	0.354	0.046	4	2,12a,12b,13
J0228.1+8208	36.8925	82.1088	UNCL	-	-	-	
J0228.2−3102	37.0541	−31.0445	UNCL	0.401	0.143	3	2,4,13
J0228.3−5547	37.0900	−55.7676	FSRQ	0.557	0.077	2	2,13
J0228.5−2234	37.1337	−22.5642	UNCL	0.734	0.025	4	11,12a,12b,13
J0229.5−3644	37.3685	−36.7325	FSRQ	0.837	-	1	13
J0230.8+4032	37.6905	40.5481	FSRQ	0.888	-	1	3
J0231.2−4745	37.7992	−47.7699	FSRQ	0.227	0.231	2	2,13
J0231.2−5754	37.7886	−57.9183	BLLAC	0.023	0.007	4	5,6,12b,13
J0231.8+1322	37.9412	13.3819	FSRQ	1.079	1.287	2	3,13
J0232.5−1118	38.1746	−11.3390	BLLAC	0.153	0.023	5	5,6,11,12a,13
J0232.8+2018	38.2026	20.2882	BLLAC	0.093	0.021	8	5,6,7,8,9,11,12b,13
J0232.9+2608	38.2348	26.1619	UNCL	0.531	0.398	3	1,3,13
J0233.0+3740	38.2833	37.7000	UNCL	0.127	0.034	3	5,6,11
J0233.5+0654	38.3749	6.9240	UNCL	0.225	0.025	7	6,7,8,9,11,12b,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0233.9+8041	38.6275	80.7270	UNCL	1.131	0.842	2	3,4
J0234.3−0628	38.5428	−6.4738	BLLAC	0.687	0.296	5	1,2,3,6,13
J0235.6−2939	38.9030	−29.6454	UNCL	1.549	0.994	3	2,3,13
J0236.8−6136	39.2219	−61.6042	FSRQ	0.350	0.108	5	2,6,12a,12b,13
J0237.6+0923	39.4189	9.3171	UNCL	0.335	0.407	2	3,13
J0237.6−3602	39.3919	−36.0579	BLLAC	0.131	0.025	2	2,13
J0237.7+0206	39.4082	2.1285	MIS	0.244	0.050	9	2,3,6,7,8,9,12a,12b,13
J0237.8+2848	39.4684	28.8025	FSRQ	0.565	0.658	2	3,13
J0238.1−3905	39.5026	−39.0846	UNCL	0.177	0.026	6	2,4,6,12a,12b,13
J0238.2+1531	39.5829	15.5563	UNCL	0.984	0.138	2	3,13
J0238.4−3116	39.6353	−31.2828	BLLAC	0.706	1.248	5	2,5,6,11,13
J0238.6+1637	39.6622	16.6165	BLLAC	0.633	0.500	2	3,13
J0239.5+1326	39.8635	13.4607	UNCL	0.595	0.290	2	3,13
J0239.5−1353	39.9130	−13.9026	UNCL	1.274	0.741	3	2,3,13
J0239.7+0415	39.9636	4.2726	FSRQ	0.628	0.424	4	2,3,6,13
J0240.8−3401	40.1987	−34.0063	UNCL	0.157	0.032	3	2,4,13
J0241.0−0505	40.2341	−5.0784	UNCL	0.536	0.202	4	1,2,3,13
J0241.9−1603	40.4642	−16.0593	UNCL	0.455	0.176	5	1,2,3,4,13
J0242.3+1102	40.6215	11.0169	FSRQ	0.863	0.176	2	3,13
J0242.6+1735	40.7009	17.6168	UNCL	1.403	-	1	13
J0242.9+0045	40.7622	0.7742	BLLAC	0.337	0.091	7	6,7,8,9,12a,12b,13
J0243.2−0550	40.8020	−5.8487	FSRQ	1.461	0.455	5	1,2,3,4,13
J0243.4+7119	40.8787	71.3383	BLLAC	0.730	-	1	3
J0243.7+0321	40.9410	3.3338	UNCL	0.635	0.238	5	2,3,4,6,13
J0244.6−5819	41.1679	−58.3318	BLLAC	0.120	0.054	4	5,6,12a,13
J0244.7+1316	41.1904	13.3353	FSRQ	0.693	0.644	2	3,13
J0245.1−0257	41.3318	−2.9412	BLLAC	0.373	0.235	4	1,2,3,13
J0245.4+2408	41.3202	24.0931	FSRQ	0.912	0.777	2	3,6
J0245.4−5950	41.2207	−59.8016	UNCL	0.512	0.083	2	2,13
J0245.5−4502	41.4755	−44.9943	FSRQ	0.136	0.088	5	2,5,6,12a,13
J0245.9−4650	41.5005	−46.8548	FSRQ	0.107	0.057	2	2,13
J0246.6−3348	41.6945	−33.8552	UNCL	-	-	-	
J0248.0+2232	42.0030	22.5220	UNCL	0.982	0.643	2	3,4
J0250.2−8224	42.7885	−82.4415	UNCL	0.359	0.189	2	4,6
J0250.6+1712	42.6582	17.2025	BLLAC	0.109	0.018	3	5,6,13
J0250.6+8435	42.4514	84.5992	UNCL	0.625	-	1	3
J0251.5−5958	42.8594	−60.0017	FSRQ	0.233	0.177	2	2,13
J0252.8−2219	43.1998	−22.3237	FSRQ	1.086	0.732	2	3,13
J0252.9+3834	43.2870	38.5903	FSRQ	0.719	0.574	2	3,6
J0253.2−0124	43.3150	−1.4015	BLLAC	0.535	0.194	4	1,2,3,13
J0253.2−5441	43.3716	−54.6976	FSRQ	0.299	0.269	2	2,13
J0253.5+3216	43.3902	32.2891	FSRQ	0.992	-	1	1
J0255.8+0534	43.9563	5.5653	BLLAC	0.580	0.214	4	1,3,8,13
J0256.3+0334	44.1173	3.5588	UNCL	0.971	1.140	5	2,3,4,6,13
J0257.0+3358	44.2830	33.9584	UNCL	0.373	0.097	2	1,4

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0257.9−1215	44.4209	−12.2004	FSRQ	0.784	0.476	3	2,3,13
J0258.1+2030	44.5305	20.5004	BLLAC	0.484	0.388	2	3,6
J0259.4+0308	44.8560	3.1250	UNCL	0.275	0.104	9	4,6,7,8,9,11,12a,12b,13
J0259.4+0746	44.8628	7.7943	FSRQ	0.964	-	1	3
J0259.5+1924	44.8736	19.4290	FSRQ	0.389	-	1	6
J0259.5−1705	44.8892	−17.0939	UNCL	0.629	0.192	5	2,3,4,6,13
J0301.0−1652	45.3193	−16.8792	BLLAC	0.374	0.403	4	2,3,6,13
J0301.4−3124	45.3177	−31.4377	FSRQ	0.201	0.065	6	2,6,11,12a,12b,13
J0301.6−7155	45.4102	−71.9429	FSRQ	0.518	-	1	6
J0301.9−2731	45.4917	−27.4653	UNCL	0.481	0.141	4	2,3,6,13
J0303.2+3149	45.7565	31.8459	UNCL	0.451	0.335	2	3,4
J0303.3+0555	45.8758	5.9084	BLLAC	0.176	0.021	5	5,6,7,8,9
J0303.3−7913	45.8371	−79.2490	FSRQ	-	-	-	
J0303.4−2407	45.8604	−24.1198	BLLAC	0.341	0.386	3	3,6,13
J0303.4−5232	45.8675	−52.5759	UNCL	0.829	0.291	3	2,4,13
J0303.6−6211	45.9610	−62.1904	FSRQ	0.382	0.425	2	2,13
J0304.4−2833	46.0680	−28.5384	BLLAC	0.598	0.391	4	2,3,4,13
J0304.5+3349	46.1723	33.8121	UNCL	0.476	0.234	2	3,4
J0304.5−0054	46.1415	−0.9013	BLLAC	0.306	0.186	5	1,3,6,8,13
J0304.9−0606	46.2523	−6.1282	UNCL	0.880	0.213	3	1,3,13
J0305.1−1608	46.3128	−16.1380	BLLAC	0.192	0.069	7	4,6,7,8,12a,12b,13
J0307.8−0419	46.9355	−4.3192	BLLAC	0.030	0.016	5	5,6,11,12b,13
J0308.1−2852	47.0702	−28.8514	UNCL	0.170	0.071	6	2,4,6,12a,12b,13
J0308.4+0407	47.1093	4.1109	MIS	0.018	0.008	4	5,6,12b,13
J0309.0+1029	47.2651	10.4879	FSRQ	1.398	-	1	3
J0309.4−4000	47.3042	−40.0308	BLLAC	0.164	0.014	5	5,6,12a,12b,13
J0309.7−0745	47.4302	−7.7410	BLLAC	0.199	0.128	7	3,6,7,8,9,12b,13
J0309.9−6058	47.4837	−60.9775	FSRQ	0.150	-	1	13
J0310.6−5017	47.6447	−50.2753	UNCL	0.239	0.071	4	2,4,6,13
J0310.8−1041	47.6421	−10.6208	UNCL	0.177	0.041	5	6,11,12a,12b,13
J0310.9+3815	47.7078	38.2483	SEY	0.576	-	1	3
J0311.5−4402	47.7636	−44.0411	UNCL	0.380	0.099	3	2,4,13
J0311.6+4134	47.8856	41.5735	UNCL	0.558	0.195	3	1,3,4
J0312.5−2221	48.1488	−22.3548	UNCL	0.399	0.373	5	2,3,4,6,13
J0312.8+0134	48.1817	1.5549	FSRQ	0.703	0.019	3	1,3,13
J0312.9+3614	48.2095	36.2554	BLLAC	0.054	0.007	3	5,6,11
J0312.9+4119	48.2582	41.3337	MIS	0.133	0.046	5	3,5,6,7,8
J0313.0+0229	48.3059	2.4765	FSRQ	0.744	0.017	3	3,12b,13
J0314.3+0620	48.5997	6.3324	BLLAC	0.143	-	1	6
J0314.3−5103	48.6071	−51.0754	BLLAC	0.258	0.189	2	2,13
J0314.6−6549	48.5935	−65.8069	FSRQ	0.377	0.392	2	12a,13
J0315.9−1033	48.9870	−10.5276	FSRQ	1.336	0.750	3	2,3,13
J0316.0−5626	49.0590	−56.4322	UNCL	0.435	0.247	2	2,13
J0316.2+0905	49.0531	9.0787	BLLAC	-	-	-	
J0316.2−2608	49.0622	−26.1326	BLLAC	0.349	0.223	4	2,3,6,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0316.2−6437	49.0597	−64.6254	BLLAC	0.211	0.119	2	2,13
J0316.8+4120	49.1791	41.3249	MIS	0.014	0.004	2	5,6
J0316.9−0625	49.2709	−6.4136	UNCL	0.533	0.136	4	1,3,4,13
J0317.7−2804	49.3904	−28.0552	AMB	1.129	0.151	3	2,3,13
J0317.8−4414	49.4903	−44.2381	MIS	0.056	0.008	5	5,6,12a,12b,13
J0318.7+2135	49.6903	21.5769	UNCL	1.830	-	1	3
J0319.4−7045	50.0384	−70.7593	UNCL	0.309	0.121	2	4,6
J0319.8+1845	49.9659	18.7596	BLLAC	0.233	0.073	3	3,6,9
J0319.8+4130	49.9507	41.5117	MIS	0.023	0.011	2	5,11
J0320.6+1125	50.1585	11.4145	UNCL	0.495	0.126	2	3,4
J0321.3+0425	50.3780	4.4410	UNCL	0.781	0.525	3	1,3,4
J0321.3−1612	50.2930	−16.2114	UNCL	0.459	0.026	5	6,11,12a,12b,13
J0322.0+2335	50.4999	23.6031	BLLAC	0.427	-	1	3
J0322.9+0940	50.7274	9.6840	UNCL	1.339	-	1	3
J0323.7−0111	50.9317	−1.1962	BLLAC	0.031	0.004	2	8,13
J0324.3−1313	51.1288	−13.1675	UNCL	-	-	-	
J0324.8+3412	51.1715	34.1794	NLS1	0.069	0.018	3	3,5,6
J0325.0−2416	51.3056	−24.2633	FSRQ	1.112	0.085	3	2,3,13
J0325.3+3332	51.3233	33.5455	BLLAC	0.120	0.018	3	5,6,11
J0325.5−5635	51.3480	−56.5957	BLLAC	0.051	0.006	5	5,6,12a,12b,13
J0325.6−1646	51.4212	−16.7713	BLLAC	0.138	0.083	2	2,13
J0325.7+2225	51.4034	22.4001	FSRQ	0.810	-	1	3
J0325.9−1843	51.4774	−18.7366	UNCL	0.309	0.082	7	2,3,4,6,12a,12b,13
J0326.2+0225	51.5581	2.4207	BLLAC	0.100	0.007	3	5,6,13
J0326.7−3404	51.6839	−34.0577	UNCL	-	-	-	
J0327.5−1805	51.9306	−18.0617	FSRQ	0.831	0.147	3	2,3,13
J0328.8−5715	52.2195	−57.2682	UNCL	0.345	0.055	3	2,6,13
J0330.6+0438	52.6830	4.6680	UNCL	0.719	0.322	3	1,3,4
J0331.1−5243	52.8125	−52.6967	MIS	0.066	0.014	5	5,6,12a,12b,13
J0331.3−6156	52.8270	−61.9246	UNCL	0.141	0.032	6	2,4,5,6,12a,13
J0331.8−7040	53.0098	−70.6636	BLLAC	0.192	-	1	6
J0332.1−1123	53.0969	−11.3307	FSRQ	0.313	0.202	6	2,3,6,12a,12b,13
J0332.8+1557	53.2168	15.9490	UNCL	0.934	0.731	3	1,3,4
J0333.1+8227	53.0990	82.4459	UNCL	0.807	0.429	2	3,6
J0333.3+0233	53.3400	2.5197	UNCL	0.863	-	1	3
J0333.7+2916	53.4542	29.2754	BLLAC	-	-	-	
J0333.7+7851	53.4357	78.8413	UNCL	0.791	0.522	2	3,4
J0333.8+4007	53.4451	40.1107	UNCL	0.392	-	1	6
J0334.2−3725	53.5643	−37.4286	BLLAC	0.068	0.043	2	2,13
J0334.2−4008	53.5569	−40.1404	BLLAC	0.227	0.164	2	2,13
J0334.3+3920	53.5767	39.3568	MIS	0.018	0.010	3	5,6,8
J0335.1−4459	53.8078	−44.9955	BLLAC	0.163	0.049	2	2,13
J0336.4+3224	54.1254	32.3082	FSRQ	0.810	0.965	2	3,6
J0336.5−0348	54.0992	−3.7941	BLLAC	0.137	0.019	5	5,6,11,12b,13
J0336.8−3612	54.2251	−36.2684	FSRQ	0.725	0.900	2	2,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0337.8−1157	54.4810	−12.0679	FSRQ	1.008	0.390	2	2,13
J0338.1−2443	54.5521	−24.7306	BLLAC	0.228	0.042	5	6,11,12a,12b,13
J0338.5+1302	54.6220	13.0376	BLLAC	1.871	-	1	3
J0338.7−5706	54.6334	−57.0802	BLLAC	0.239	0.058	5	4,6,12a,12b,13
J0339.2−1736	54.8071	−17.6002	MIS	0.040	0.009	6	5,6,11,12a,12b,13
J0339.5−0146	54.8789	−1.7766	FSRQ	0.630	0.722	2	3,13
J0340.4−2422	55.0954	−24.4020	FSRQ	0.964	0.717	5	2,3,4,6,13
J0340.5−0256	55.1358	−2.9151	UNCL	0.619	0.153	5	3,4,6,12b,13
J0340.5−2118	55.1484	−21.3253	BLLAC	0.403	0.254	3	2,3,13
J0342.2+3858	55.5678	38.9851	FSRQ	1.189	0.486	3	1,3,6
J0342.8−3007	55.6681	−30.1328	UNCL	0.866	0.148	4	4,11,12a,13
J0343.2−2529	55.8313	−25.5048	FSRQ	0.942	0.581	4	2,3,6,13
J0343.2−6444	55.8359	−64.7154	UNCL	0.582	0.791	4	2,6,12a,13
J0343.4+3621	55.8706	36.3701	FSRQ	1.453	0.009	2	1,3
J0344.2+3203c	56.0758	32.1510	UNCL	-	-	-	
J0344.4+3432	56.1040	34.5050	UNCL	0.251	-	1	6
J0345.2−2353	56.3263	−23.8723	BLLAC	0.526	0.441	4	2,3,12a,13
J0345.5−3301	56.3740	−32.9354	UNCL	0.522	0.193	5	4,6,12a,12b,13
J0347.7−3616	56.9962	−36.2768	UNCL	0.761	0.082	2	2,13
J0348.5−2749	57.1589	−27.8204	FSRQ	0.605	0.242	3	2,3,13
J0348.6−1609	57.1636	−16.1716	BLLAC	0.437	0.438	4	2,3,6,13
J0348.8−0828	57.1901	−8.4069	UNCL	1.140	0.611	3	3,4,13
J0348.9−4859	57.3039	−48.9736	UNCL	0.583	0.147	6	2,4,6,12a,12b,13
J0349.4−1159	57.3466	−11.9909	AMB	0.159	0.068	5	6,7,8,12b,13
J0349.6+2410	57.4304	24.2533	UNCL	-	-	-	
J0349.8−2103	57.4909	−21.0466	FSRQ	1.024	0.072	3	2,3,13
J0350.0+0640	57.4910	6.6906	UNCL	0.206	0.070	3	4,6,11
J0350.4−5144	57.6182	−51.7484	UNCL	0.275	0.044	3	2,4,6
J0350.6−3226	57.6805	−32.5498	FSRQ	1.088	0.018	3	12a,12b,13
J0350.8−2814	57.7138	−28.2758	UNCL	0.685	0.212	4	2,3,4,13
J0352.0−2516	58.0461	−25.2473	UNCL	0.606	0.187	4	2,3,6,13
J0352.9−3623	58.2712	−36.3856	BLLAC	1.209	1.410	3	2,4,13
J0353.0−6831	58.2400	−68.5214	MIS	0.056	0.002	2	5,6
J0353.7+8257	58.2855	82.9421	BLLAC	0.068	0.015	3	5,6,11
J0354.7+8009	58.6922	80.1580	BLLAC	0.744	0.460	2	1,3
J0354.7−1617	58.6043	−16.2729	FSRQ	0.910	0.282	3	2,3,13
J0355.3+3909	58.8191	39.1527	UNCL	0.846	0.595	2	3,4
J0356.1−1329	59.0454	−13.4850	UNCL	0.234	0.092	6	2,4,6,12a,12b,13
J0357.0−4955	59.2508	−49.9302	BLLAC	0.254	0.195	2	2,13
J0357.2+2320	59.3400	23.3316	UNCL	1.250	-	1	3
J0357.2−0319	59.3588	−3.2999	UNCL	0.239	0.036	4	4,6,12b,13
J0357.6−4625	59.3697	−46.4287	BLLAC	0.080	0.012	5	4,5,6,12b,13
J0358.0−6946	59.3753	−69.8125	UNCL	-	-	-	
J0358.1−5954	59.5583	−59.8759	UNCL	0.488	0.004	2	12b,13
J0358.6+0634	59.6131	6.4887	UNCL	0.654	0.206	2	3,4

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0358.7+7649	59.6263	76.8242	UNCL	0.662	0.423	2	3,6
J0359.0−3053	59.7342	−30.9128	BLLAC	0.136	-	1	13
J0359.4−2616	59.8903	−26.2587	BLLAC	0.886	0.259	3	2,3,13
J0400.7+3920	60.1891	39.3527	UNCL	1.100	-	1	3
J0401.0−5353	60.2967	−53.9162	UNCL	0.489	0.130	3	4,12a,13
J0401.3+0412	60.3330	4.2262	BLLAC	0.568	-	1	3
J0401.7+2112	60.4382	21.1746	FSRQ	1.010	-	1	3
J0401.9−2034	60.4696	−20.5861	UNCL	0.626	0.137	3	3,4,13
J0402.0+2737	60.5133	27.6211	UNCL	1.274	-	1	3
J0402.0−2616	60.5033	−26.2609	BLLAC	0.407	0.289	3	2,3,13
J0402.1−3147	60.5886	−31.7905	FSRQ	0.487	0.250	2	2,13
J0403.3+2601	60.7733	26.0004	FSRQ	0.762	0.288	2	3,6
J0403.5−2437	60.9239	−24.7357	FSRQ	0.483	0.159	3	2,3,13
J0403.9−3605	60.9740	−36.0839	FSRQ	0.177	0.165	2	2,13
J0404.1−1715	61.1070	−17.3074	UNCL	0.554	0.378	4	2,3,4,13
J0404.3−1559	61.1737	−15.9905	UNCL	1.223	0.411	3	3,4,13
J0405.6−1308	61.3917	−13.1371	FSRQ	0.365	0.433	2	3,13
J0406.0−5407	61.5361	−54.0805	BLLAC	0.193	0.025	5	2,6,12a,12b,13
J0407.0−3826	61.7460	−38.4411	FSRQ	0.350	0.334	2	2,13
J0407.5+0741	61.8712	7.7021	CLAGN	0.478	0.423	2	3,6
J0409.4+3201	62.3684	32.0460	UNCL	0.243	0.076	2	4,6
J0409.8−0359	62.4441	−4.0010	BLLAC	0.666	0.666	2	3,13
J0411.7+3041	62.9436	30.6632	UNCL	-	-	-	
J0412.3+0239	63.1196	2.6772	UNCL	0.834	0.178	2	3,4
J0413.1−5332	63.3061	−53.5335	FSRQ	0.895	-	1	13
J0414.6−0842	63.6379	−8.7019	BLLAC	0.735	0.430	2	3,13
J0414.8−5338	63.7422	−53.6622	BLLAC	0.825	0.904	3	2,6,13
J0415.2−5741	63.7774	−57.7065	UNCL	0.698	0.096	2	12a,13
J0416.0−4743	63.9761	−47.6265	UNCL	0.475	0.074	3	2,4,13
J0416.0−6628	64.0217	−66.4826	BLLAC	0.219	-	1	6
J0416.2−4353	64.0553	−43.8489	UNCL	1.044	-	1	13
J0416.5−1852	64.1523	−18.8523	FSRQ	0.830	0.353	3	2,3,13
J0416.9+0105	64.2187	1.0900	BLLAC	0.088	-	1	6
J0418.1−0252	64.4928	−2.8387	UNCL	0.125	-	1	13
J0418.4+3414	64.5415	34.1930	UNCL	1.256	0.727	3	1,3,4
J0420.0+0805	64.9967	8.0774	UNCL	1.143	0.105	3	1,3,4
J0420.3−3745	65.1046	−37.7458	UNCL	0.257	0.121	4	2,4,12a,13
J0420.3−6016	65.0460	−60.2514	UNCL	0.225	0.100	2	2,4
J0421.0−0752	65.2248	−7.8722	UNCL	0.193	0.025	4	5,6,12b,13
J0422.1−0644	65.5450	−6.7293	FSRQ	0.336	0.326	4	3,6,11,13
J0422.3+1951	65.5771	19.8481	BLLAC	-	-	-	
J0422.8+0225	65.7176	2.3241	FSRQ	1.337	1.081	2	3,6
J0423.1+2106	65.7583	21.1339	UNCL	0.649	0.236	3	1,3,4
J0423.3−0120	65.8158	−1.3425	FSRQ	0.344	0.346	2	3,13
J0424.7+0036	66.1952	0.6018	BLLAC	0.793	1.004	2	3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0424.9−5331	66.2678	−53.5328	BLLAC	0.175	0.033	2	2,13
J0426.7+6826	66.7086	68.4314	UNCL	0.581	0.440	2	3,6
J0427.3−3900	66.8403	−39.0167	UNCL	0.718	0.272	3	2,4,13
J0428.6−3756	67.1684	−37.9388	BLLAC	0.180	0.094	2	2,13
J0428.7−5003	67.1776	−50.0929	UNCL	1.328	0.296	2	2,13
J0429.0−0006	67.3297	−0.1030	UNCL	1.056	0.135	3	3,4,13
J0429.3−3238	67.2508	−32.6108	BLLAC	1.105	-	1	13
J0429.3−4326	67.3543	−43.4768	FSRQ	0.731	0.511	3	2,6,13
J0429.8+2843	67.4583	28.7148	UNCL	1.232	0.843	2	3,4
J0429.9−3101	67.4956	−30.9931	BLLAC	0.138	0.044	3	6,12a,13
J0430.2−0356	67.8670	−4.1075	FSRQ	0.660	0.263	5	1,3,6,11,13
J0430.3+1654	67.5931	16.9180	UNCL	0.758	0.612	2	3,4
J0430.3−2507	67.5668	−25.1275	BLLAC	0.563	0.400	4	2,3,6,13
J0431.8+7403	67.9378	74.0574	BLLAC	1.352	-	1	3
J0432.0+1732	67.9891	17.5266	BLLAC	1.227	-	1	3
J0433.0+0522	68.2962	5.3543	MIS	0.344	0.420	3	3,5,6
J0433.1+3227	68.2815	32.4780	BLLAC	-	-	-	
J0433.5−1039	68.3870	−10.7090	UNCL	0.217	0.048	4	4,6,12b,13
J0433.6+2905	68.4076	29.0987	BLLAC	0.655	0.802	2	3,6
J0433.6−6030	68.3921	−60.5038	FSRQ	0.687	-	1	13
J0433.7−5725	68.4339	−57.4370	BLLAC	0.421	0.098	3	2,6,13
J0434.1−2014	68.5330	−20.2548	BLLAC	0.731	0.166	3	2,3,13
J0434.4−2342	68.6207	−23.7015	BLLAC	0.979	0.344	2	3,13
J0434.7+0922	68.6708	9.3969	BLLAC	0.882	0.910	2	3,4
J0435.4−2623	68.8240	−26.3562	BLLAC	0.202	0.083	4	2,12a,12b,13
J0436.7−7148	69.2682	−71.8056	UNCL	0.800	-	1	4
J0436.8−5223	69.2175	−52.2776	UNCL	0.618	0.135	5	2,4,12a,12b,13
J0437.2−5846	69.1801	−58.6695	UNCL	0.307	-	1	13
J0437.4−6155	69.3324	−61.9486	BLLAC	-	-	-	
J0438.4−1254	69.6459	−12.8509	FSRQ	0.704	0.259	2	3,6
J0438.7−3441	69.6867	−34.6970	AMB	0.383	0.023	2	4,6
J0438.9−4521	69.7536	−45.3729	BLLAC	0.678	0.029	2	2,13
J0439.2+2151	69.7329	21.8862	UNCL	1.270	0.039	2	1,4
J0439.4−3202	69.8842	−32.0145	UNCL	0.343	0.048	4	2,4,6,13
J0439.8−1859	69.9572	−19.0171	UNCL	0.708	0.565	3	2,3,13
J0440.2−2458	70.0776	−24.9926	BLLAC	0.324	0.148	5	4,6,12a,12b,13
J0440.3−4333	70.0716	−43.5524	FSRQ	0.451	0.001	2	2,13
J0440.4+1440	70.0881	14.6325	UNCL	1.115	-	1	3
J0440.8+2749	70.2099	27.8464	BLLAC	0.200	-	1	4
J0441.3−2617	70.3338	−26.2833	UNCL	1.249	0.737	3	4,12a,13
J0441.5+1505	70.3642	15.0822	BLLAC	0.421	0.341	2	3,6
J0442.6−0017	70.6611	−0.2954	NLS1	0.644	0.210	3	1,3,13
J0442.7+6142	70.6694	61.6776	UNCL	0.200	-	1	4
J0443.3−6652	70.8258	−66.8679	FSRQ	-	-	-	
J0443.4−4152	70.8683	−41.8656	BLLAC	0.314	0.239	3	2,6,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0444.5+0719	71.0915	7.2883	UNCL	0.845	0.193	2	3,11
J0445.1−6012	71.2563	−60.2499	FSRQ	0.098	0.018	5	5,6,12a,12b,13
J0447.2−2539	71.8394	−25.6585	UNCL	0.166	0.051	6	4,6,11,12a,12b,13
J0447.4−2747	71.8172	−27.8019	UNCL	1.105	0.035	4	2,12a,12b,13
J0448.6−1632	72.1568	−16.5453	BLLAC	1.768	-	1	3
J0449.1+1121	72.2820	11.3579	CLAGN	0.897	0.652	2	1,3
J0449.2+6329	72.3471	63.5360	FSRQ	0.829	0.441	2	3,6
J0449.4−4350	72.3529	−43.8358	BLLAC	0.037	-	1	13
J0449.6−8100	72.5227	−81.0173	FSRQ	0.330	-	1	6
J0450.3−4419	72.5088	−44.3059	UNCL	0.743	0.102	3	2,4,13
J0450.4+7230	72.7904	72.5035	UNCL	0.552	0.252	3	3,4,6
J0450.7−4938	72.7612	−49.6074	UNCL	0.749	0.198	2	4,13
J0451.8−4651	72.9723	−46.8889	FSRQ	0.722	0.171	2	6,13
J0452.0+2100	73.0638	21.0511	UNCL	0.417	0.279	3	3,4,6
J0453.1+6322	73.3019	63.3550	UNCL	2.099	-	1	3
J0453.1−2806	73.3110	−28.1270	FSRQ	0.586	0.405	3	2,3,13
J0455.7−4617	73.9616	−46.2663	FSRQ	0.491	0.612	2	2,13
J0456.2+2702	74.0724	27.0392	UNCL	-	-	-	
J0456.4−4043	74.1346	−40.6895	UNCL	0.606	0.067	4	6,12a,12b,13
J0456.6−3136	74.1528	−31.6035	FSRQ	0.449	0.139	4	2,6,11,13
J0457.0+0646	74.2821	6.7520	FSRQ	0.536	0.271	2	3,6
J0457.0−2324	74.2632	−23.4145	BLLAC	0.624	0.664	3	2,3,13
J0458.0+1152	74.5204	11.8620	UNCL	0.152	0.042	6	4,5,6,7,8,11
J0459.4+1921	74.8646	19.3709	UNCL	0.385	0.184	2	3,6
J0500.6−4911	75.1617	−49.2046	UNCL	0.194	0.088	5	2,6,12a,12b,13
J0501.0+2424	75.2788	24.3884	UNCL	0.839	0.718	2	3,4
J0501.2−0158	75.3034	−1.9873	FSRQ	0.775	0.486	2	3,6
J0502.4+0609	75.5644	6.1521	FSRQ	1.214	-	1	3
J0502.5+1340	75.6384	13.6364	BLLAC	0.635	0.407	2	3,6
J0502.9+6533	75.7742	65.5670	UNCL	0.240	0.080	2	4,6
J0503.1−6045	76.0071	−60.8313	FSRQ	0.956	0.059	2	2,13
J0503.5−1116	75.8971	−11.2519	BLLAC	2.264	-	1	3
J0505.3+0459	76.3466	4.9952	FSRQ	0.947	-	1	3
J0505.6+0415	76.3949	4.2652	BLLAC	0.143	-	1	6
J0505.6+6405	76.4206	64.1073	UNCL	1.270	0.707	2	3,4
J0505.6−1558	76.4233	−15.9773	UNCL	0.415	0.137	2	3,6
J0505.8−0419	76.4635	−4.3241	FSRQ	0.496	0.095	2	1,3
J0505.8−3817	76.5070	−38.3488	BLLAC	0.137	0.012	5	5,6,12a,12b,13
J0506.0+6113	76.4949	61.2267	BLLAC	0.300	-	1	4
J0506.0−0357c	76.5249	−4.0312	BLLAC	1.221	1.034	2	1,3
J0506.7−0857	76.6663	−8.9672	UNCL	0.486	0.248	2	3,4
J0506.9+0323	76.7089	3.3997	BLLAC	0.593	0.447	3	3,4,6
J0506.9−5435	76.7409	−54.5844	BLLAC	0.102	0.002	2	2,13
J0507.4−3346	76.8636	−33.7765	BLLAC	0.288	0.174	3	2,12a,13
J0507.7−6104	76.9778	−61.0786	FSRQ	0.677	-	1	13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0507.9+6737	76.9840	67.6234	BLLAC	-	-	-	
J0508.2−1937	77.0792	−19.5989	FSRQ	1.170	0.408	3	2,3,13
J0509.1+1943	77.3254	19.6918	UNCL	0.577	-	1	11
J0509.4+0542	77.3582	5.6931	BLLAC	0.842	-	1	3
J0509.4+1012	77.3644	10.1957	CLAGN	0.590	0.545	2	3,6
J0509.6+8425	77.1765	84.5346	BLLAC	0.621	-	1	3
J0509.6−0402	77.4091	−4.0127	UNCL	0.144	-	1	6
J0509.9−6417	77.4887	−64.2949	BLLAC	-	-	-	
J0510.0+1800	77.5099	18.0116	CLAGN	0.537	0.357	2	3,6
J0510.4−1809	77.5639	−18.2078	UNCL	1.117	0.853	2	3,13
J0511.4−6804	77.8732	−68.1048	UNCL	-	-	-	
J0513.9−3746	78.5167	−37.7680	UNCL	0.793	0.142	2	4,13
J0514.5+6247	78.5901	62.7443	UNCL	0.169	-	1	6
J0515.5−0125	78.9010	−1.4078	UNCL	1.164	0.247	4	1,3,4,6
J0515.6−4556	78.9385	−45.9453	AMB	0.184	0.136	4	2,6,12a,13
J0515.8+1527	78.9473	15.4546	BLLAC	0.648	0.502	2	3,6
J0515.9+0537	78.9654	5.5501	UNCL	-	-	-	
J0516.1−7240	79.1572	−72.6187	UNCL	0.536	-	1	6
J0516.4+7350	79.1301	73.8524	BLLAC	-	-	-	
J0516.7−6207	79.1872	−62.1182	BLLAC	1.039	0.672	3	2,4,13
J0516.8−0509	79.3671	−5.3447	FSRQ	1.530	0.308	2	1,3
J0517.5+0858	79.4169	8.9766	FSRQ	0.400	0.135	3	3,6,11
J0517.7−1758	79.3502	−17.9400	UNCL	0.952	0.197	3	11,12b,13
J0519.0+0851	79.7950	8.8158	UNCL	1.268	-	1	3
J0519.6−4544	79.9572	−45.7788	MIS	0.127	0.145	6	2,5,6,12a,12b,13
J0521.2+1637	80.2912	16.6395	MIS	0.791	0.017	2	1,3
J0521.3−1734	80.3482	−17.6251	FSRQ	0.269	0.150	6	2,3,6,12a,12b,13
J0521.6+0103	80.4200	1.0488	BLLAC	1.536	-	1	3
J0521.8−3848	80.4553	−38.8419	UNCL	0.428	0.213	4	4,6,12a,13
J0522.9−3628	80.7416	−36.4586	CLAGN	0.125	0.164	5	2,6,12a,12b,13
J0524.6−2819	81.2276	−28.3116	UNCL	1.042	0.366	3	2,3,13
J0525.4−4600	81.3808	−45.9652	FSRQ	0.696	0.873	2	2,13
J0525.6−2008	81.3668	−20.1801	BLLAC	0.066	0.012	3	11,12a,13
J0525.6−6013	81.4268	−60.2278	UNCL	0.637	0.102	4	2,4,6,13
J0525.8−0052	81.4776	−0.8612	UNCL	0.704	0.351	3	1,3,4
J0526.1+6318	81.5280	63.2914	UNCL	1.301	-	1	3
J0526.2−4830	81.5695	−48.5102	FSRQ	0.587	0.551	2	2,13
J0526.7−1519	81.6893	−15.3168	BLLAC	0.200	-	1	4
J0527.3−6223	81.9394	−62.4212	BLLAC	0.084	0.043	5	5,6,12a,12b,13
J0528.7−5920	82.1919	−59.3344	BLLAC	0.124	0.031	2	2,13
J0529.1+0935	82.2607	9.5765	UNCL	0.240	0.080	2	4,6
J0529.1−0101	82.2676	−0.9597	UNCL	0.784	0.298	4	1,3,4,6
J0529.3−7243	82.3752	−72.7579	UNCL	-	-	-	
J0529.4−0521	82.4731	−5.3282	FSRQ	0.683	0.360	3	1,3,6
J0530.9+1332	82.7351	13.5320	FSRQ	1.140	1.181	2	3,6

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0532.0−4827	82.9942	−48.4600	BLLAC	1.134	0.797	3	2,6,13
J0532.6+0732	83.1625	7.5454	FSRQ	1.507	-	1	3
J0532.8−3941	83.2383	−39.6858	UNCL	0.586	0.143	4	6,12a,12b,13
J0532.9−8325	83.4098	−83.4099	FSRQ	-	-	-	
J0533.0−8446	83.0139	−84.7994	UNCL	-	-	-	
J0533.1−6119	83.7155	−61.3657	UNCL	1.044	0.008	2	12a,13
J0533.3−5549	83.3516	−55.8268	UNCL	0.841	-	1	13
J0533.8−3749	83.5729	−37.7904	FSRQ	0.807	0.143	2	2,13
J0536.0−2754	83.9648	−27.8657	UNCL	1.298	0.734	4	2,3,6,13
J0536.4−3343	84.1211	−33.7174	BLLAC	0.194	0.141	2	2,13
J0536.4−3401	84.1185	−34.0199	FSRQ	0.205	-	1	13
J0536.5−2548	84.1120	−25.7967	UNCL	0.619	0.256	3	2,3,13
J0537.7−5717	84.4540	−57.3084	BLLAC	0.131	0.026	2	2,13
J0538.2−3910	84.5432	−39.1451	BLLAC	0.211	0.058	5	4,6,12a,12b,13
J0538.6+0443	84.6950	4.7049	UNCL	1.124	-	1	3
J0538.8−4405	84.7098	−44.0858	BLLAC	0.439	0.482	2	2,13
J0539.7−0521c	84.9997	−5.2448	UNCL	1.835	0.047	2	3,4
J0539.9−2839	84.9762	−28.6655	FSRQ	1.128	0.604	3	2,3,13
J0540.5+5823	85.1250	58.3940	BLLAC	-	-	-	
J0540.8−5415	85.1910	−54.3061	FSRQ	0.487	0.479	3	2,6,13
J0541.1−4854	85.2754	−48.9022	UNCL	-	-	-	
J0541.4−7334	85.4616	−73.5376	UNCL	-	-	-	
J0541.6−0541	85.4087	−5.6971	FSRQ	0.865	-	1	3
J0542.8−3458	85.7263	−34.9985	UNCL	0.201	0.016	4	4,6,12b,13
J0542.9−0913	85.7328	−9.2253	UNCL	-	-	-	
J0543.9−5531	85.9884	−55.5354	BLLAC	0.218	0.224	4	2,6,12a,13
J0545.0+0613c	86.3714	6.3325	UNCL	1.370	0.360	2	3,4
J0546.9−2206	86.7366	−22.0826	BLLAC	0.213	0.031	5	6,11,12a,12b,13
J0548.5−5218	87.1257	−52.3078	UNCL	0.283	0.104	3	2,4,13
J0550.3−5733	87.5399	−57.5401	FSRQ	0.520	0.161	2	2,13
J0550.5−3216	87.6690	−32.2712	BLLAC	0.055	0.004	4	5,6,12a,13
J0551.0−1622	87.7136	−16.3639	UNCL	0.957	0.476	2	3,4
J0551.8−3517	87.9263	−35.2592	UNCL	0.332	0.204	3	2,4,13
J0552.8+0313	88.2088	3.2242	UNCL	0.605	-	1	7
J0553.5−2034	88.3880	−20.5719	UNCL	1.070	1.265	2	3,13
J0554.3−1009c	88.8845	−10.0353	UNCL	1.924	-	1	3
J0555.1+0304	88.7541	3.0737	UNCL	-	-	-	
J0556.2−4352	89.0781	−43.8628	BLLAC	0.467	0.023	2	2,13
J0557.3−0615	89.3201	−6.2852	UNCL	1.107	1.077	2	3,4
J0557.6−0721	89.4057	−7.3205	UNCL	0.718	-	1	3
J0558.0−3837	89.5268	−38.6421	BLLAC	1.637	2.086	2	2,13
J0558.1−2859	89.4996	−28.9304	UNCL	0.557	0.117	6	3,4,6,12a,12b,13
J0558.8−7459	89.6918	−74.9848	BLLAC	0.194	-	1	6
J0559.9+6409	89.9970	64.1662	UNCL	0.318	0.109	4	1,4,6,11
J0600.6−3939	90.1309	−39.6173	FSRQ	0.521	0.239	2	2,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0601.1−7035	90.2969	−70.6024	FSRQ	-	-	-	
J0601.3+5444	90.2571	54.7267	UNCL	0.052	0.011	3	5,6,11
J0601.3−7238	90.4222	−72.6426	UNCL	0.135	0.014	2	5,6
J0601.8−2003	90.4701	−20.0792	FSRQ	1.133	-	1	3
J0602.0+5315	90.5019	53.2667	BLLAC	0.047	0.004	3	5,6,11
J0602.7−0007	90.6787	−0.0743	BLLAC	0.072	0.037	5	5,6,7,8,11
J0602.8−4019	90.7137	−40.3126	UNCL	0.204	0.129	2	2,13
J0604.1−4816	91.0359	−48.2903	BLLAC	0.130	-	1	13
J0604.5−4851	91.1379	−48.8299	UNCL	0.760	0.376	3	2,6,13
J0604.8+4411	91.1485	44.2329	FSRQ	1.398	-	1	3
J0604.9−0000	91.2434	0.0120	UNCL	-	-	-	
J0606.5−4730	91.6489	−47.4986	SEY	0.023	0.005	4	5,6,12b,13
J0606.9+4402	91.7092	44.0280	UNCL	0.682	0.376	2	3,4
J0607.2−2518	91.8096	−25.3161	BLLAC	0.190	-	1	6
J0607.4+4739	91.8469	47.6630	BLLAC	1.022	-	1	3
J0608.0+6721	91.9695	67.3487	FSRQ	1.064	0.306	2	3,13
J0608.0−0835	91.9987	−8.5805	FSRQ	-	-	-	
J0608.1−1521	92.0064	−15.3436	FSRQ	0.831	0.491	2	3,6
J0608.1−6028	91.9795	−60.5311	FSRQ	0.814	0.477	3	2,4,13
J0608.9−5456	92.2044	−54.9452	UNCL	1.004	0.860	3	2,4,13
J0609.0−2219	92.2487	−22.3392	FSRQ	1.493	-	1	3
J0609.2−0247	92.3128	−2.7985	BLLAC	0.711	0.681	2	3,4
J0610.1−1848	92.5745	−18.7945	BLLAC	0.485	0.378	2	3,6
J0610.9−6054	92.6262	−60.9772	FSRQ	1.034	0.955	2	2,13
J0611.1+4325	92.7854	43.4084	UNCL	-	-	-	
J0611.6−2712	92.9426	−27.1564	UNCL	1.063	0.351	2	3,4
J0612.5−3138	93.1236	−31.6495	FSRQ	0.436	-	1	6
J0612.5−3934	93.1575	−39.6498	UNCL	0.403	0.131	4	2,4,6,13
J0612.8+4122	93.2133	41.3771	BLLAC	0.764	0.894	2	3,6
J0614.8+6136	93.6757	61.6523	UNCL	0.812	0.855	3	3,4,6
J0615.3−3117	93.8300	−31.2893	BLLAC	0.289	-	1	6
J0616.1−1732	94.0429	−17.5515	UNCL	-	-	-	
J0616.7−1049	94.1742	−10.6857	UNCL	1.085	0.153	2	3,4
J0616.9+4340	94.2614	43.6759	UNCL	0.300	-	1	4
J0617.2+5701	94.3205	57.0212	BLLAC	0.592	0.638	2	3,13
J0617.7−1715	94.3892	−17.2570	BLLAC	0.076	0.022	3	5,6,11
J0618.1−2428	94.5944	−24.4439	FSRQ	0.278	0.119	4	3,4,6,11
J0618.9−1138	94.7671	−11.6819	UNCL	1.286	-	1	3
J0620.5−2512	95.1338	−25.2549	FSRQ	1.714	0.248	2	3,4
J0621.2−2213	95.2926	−22.2285	UNCL	-	-	-	
J0621.2−4648	95.3310	−46.8329	FSRQ	0.286	0.115	2	2,13
J0621.7−3411	95.4567	−34.1969	BLLAC	-	-	-	
J0622.3−2605	95.5919	−26.0957	BLLAC	0.882	-	1	3
J0622.4−6433	95.7821	−64.6058	FSRQ	0.085	0.012	2	5,6
J0622.7−4141	95.6771	−41.7330	UNCL	-	-	-	

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0623.0−3010	95.7981	−30.1645	UNCL	-	-	-	
J0623.7−3348	95.9163	−33.8374	UNCL	-	-	-	
J0623.9−5259	95.9079	−52.9661	BLLAC	0.180	-	1	13
J0624.2−2943	96.0929	−29.7469	UNCL	-	-	-	
J0625.3+4439	96.3261	44.6671	BLLAC	0.591	0.698	2	3,13
J0625.8−5441	96.4676	−54.6474	FSRQ	0.812	0.877	3	2,6,13
J0626.4−1712	96.6095	−17.1796	UNCL	0.775	0.101	2	3,4
J0626.4−4259	96.6529	−42.9683	UNCL	0.300	-	1	4
J0627.0−3529	96.7780	−35.4876	MIS	0.022	0.012	2	5,6
J0628.6+6900	97.3427	69.0054	UNCL	0.131	0.051	5	3,4,6,11,13
J0628.8−6250	97.2395	−62.8124	BLLAC	-	-	-	
J0629.3−1959	97.3490	−19.9888	BLLAC	1.293	-	1	3
J0630.2+3228	97.5445	32.4361	UNCL	0.717	-	1	11
J0630.9−2406	97.7480	−24.1128	BLLAC	1.229	-	1	3
J0633.4−2222	98.3615	−22.3895	FSRQ	2.434	-	1	3
J0634.9−2335	98.7458	−23.5867	FSRQ	1.114	-	1	3
J0635.6−7518	98.9438	−75.2713	FSRQ	-	-	-	
J0636.5+7138	99.1787	71.6454	UNCL	1.169	-	1	3
J0637.4−3537	99.4434	−35.6134	UNCL	0.478	0.029	2	4,6
J0638.2+6020	99.6490	60.2842	UNCL	0.386	0.214	3	3,4,13
J0638.6+7320	99.8415	73.4161	FSRQ	1.778	-	1	3
J0638.7+5658	99.6073	57.0307	UNCL	0.704	0.395	3	3,4,13
J0639.6+3503	99.7900	35.1063	UNCL	0.772	0.523	4	3,4,6,13
J0643.2−5356	100.8342	−53.9797	UNCL	0.300	-	1	4
J0644.4−6712	101.1169	−67.2159	FSRQ	0.550	-	1	6
J0644.6+6039	101.1489	60.6475	BLLAC	0.234	0.088	2	4,13
J0644.6−2853	101.1823	−28.8546	BLLAC	0.784	0.512	2	3,4
J0646.7−3913	101.6288	−39.0609	FSRQ	-	-	-	
J0647.0−5138	101.7918	−51.5966	BLLAC	0.161	0.053	2	4,6
J0647.7−4418	101.9463	−44.3306	UNCL	-	-	-	
J0647.7−6058	101.9202	−60.9681	BLLAC	-	-	-	
J0647.8+4527	101.9580	45.4197	UNCL	0.577	0.450	2	3,13
J0648.0−3045	102.0587	−30.7388	FSRQ	-	-	-	
J0648.4−6941	102.2104	−69.7563	BLLAC	0.266	0.045	2	4,6
J0649.5−3139	102.3900	−31.6556	UNCL	-	-	-	
J0650.5−2851	102.6372	−28.8216	UNCL	-	-	-	
J0650.7+2503	102.6937	25.0499	BLLAC	-	-	-	
J0651.0+4013	102.7726	40.2272	BLLAC	0.316	0.287	4	3,4,6,13
J0651.4+6525	102.8555	65.4158	UNCL	0.600	0.299	4	1,3,4,13
J0651.5+7956	102.9949	79.9422	UNCL	0.793	0.718	4	3,4,12b,13
J0652.1−4813	103.0024	−48.1498	BLLAC	0.400	-	1	4
J0653.7+2815	103.4345	28.2631	BLLAC	0.891	-	1	3
J0654.0−4152	103.4995	−41.8625	MIS	0.086	0.015	2	5,6
J0654.3+5042	103.5921	50.7066	FSRQ	0.019	-	1	13
J0654.4+4514	103.5988	45.2399	FSRQ	0.808	0.579	2	3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0654.6−4952	103.8268	−49.8683	UNCL	-	-	-	
J0654.7+4246	103.6814	42.7996	BLLAC	0.079	0.021	5	5,6,11,12b,13
J0656.3+4235	104.0444	42.6174	BLLAC	0.047	0.013	5	5,6,11,12b,13
J0658.1−5840	104.5574	−58.6743	FSRQ	-	-	-	
J0658.2+2709	104.5386	27.1396	UNCL	1.210	-	1	3
J0659.6−2742	104.9580	−27.7551	FSRQ	1.728	-	1	3
J0659.6−6742	104.8872	−67.7306	UNCL	0.424	0.033	2	4,6
J0700.1−6311	104.9945	−63.2108	UNCL	0.592	0.011	2	4,6
J0700.5−6610	105.1302	−66.1792	BLLAC	-	-	-	
J0701.5+2511	105.3840	25.1649	UNCL	0.602	0.622	3	3,4,6
J0701.5−4634	105.3939	−46.5768	FSRQ	-	-	-	
J0703.2−3914	105.8027	−39.2386	UNCL	-	-	-	
J0704.7+4508	106.2124	45.0449	UNCL	0.613	0.357	3	3,4,13
J0704.8+4907	106.2497	49.1101	UNCL	0.619	0.054	2	12b,13
J0705.7−4848	106.4947	−48.7901	UNCL	-	-	-	
J0705.9+5309	106.5306	53.1653	UNCL	0.626	0.318	5	3,4,6,12b,13
J0706.5+3744	106.6321	37.7434	BLLAC	0.656	0.804	2	3,13
J0706.8+7742	106.7139	77.6936	BLLAC	0.566	0.652	2	3,13
J0706.9+6109	106.7526	61.1699	BLLAC	0.327	0.268	3	3,6,13
J0708.9+4839	107.2834	48.6155	MIS	0.013	0.003	4	5,6,11,13
J0709.1+2241	107.2429	22.6932	BLLAC	0.331	0.256	2	3,6
J0710.4+5908	107.6253	59.1390	BLLAC	0.084	0.025	4	5,6,11,13
J0710.8−3851	107.6818	−38.8436	FSRQ	0.108	0.001	2	5,6
J0710.9+4733	107.6921	47.5364	FSRQ	0.078	-	1	13
J0712.4+5724	108.0788	57.3301	BLLAC	0.436	0.151	3	6,12b,13
J0712.7+5033	108.1820	50.5563	BLLAC	0.460	0.464	2	3,13
J0713.0+5738	108.2689	57.6361	UNCL	0.600	0.502	3	3,4,13
J0713.5+2537	108.4030	25.6714	UNCL	-	-	-	
J0713.8+1935	108.4820	19.5834	FSRQ	1.351	-	1	3
J0714.4+1110	108.5691	11.1417	UNCL	1.004	0.273	2	3,4
J0715.3−6828	108.7896	−68.4995	UNCL	-	-	-	
J0715.6−4528	108.9363	−45.5085	UNCL	0.175	-	1	6
J0717.7−5519	109.4378	−55.3394	UNCL	-	-	-	
J0718.0+4536	109.4661	45.6342	FSRQ	0.623	0.777	2	3,13
J0718.6−4319	109.6818	−43.3305	BLLAC	-	-	-	
J0719.1−7055	109.7859	−70.9010	BLLAC	0.184	-	1	6
J0719.3+3307	109.8309	33.1194	CLAGN	0.699	0.842	2	3,13
J0719.7−4012	109.9133	−40.1965	BLLAC	0.223	-	1	6
J0720.0−6237	109.7686	−62.3007	FSRQ	-	-	-	
J0721.9+7120	110.4727	71.3434	BLLAC	0.033	-	1	13
J0722.7+3606	110.7392	36.1055	UNCL	0.786	0.296	5	1,3,4,6,13
J0723.4+5841	110.8086	58.6891	UNCL	0.232	0.043	4	4,6,12b,13
J0723.5+2900	110.9785	28.9916	FSRQ	0.554	0.419	3	3,6,13
J0723.7+2050	110.9514	20.8585	BLLAC	0.555	0.588	3	3,4,13
J0725.2+1425	111.3200	14.4205	FSRQ	0.722	0.367	3	1,3,6

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0726.1+8114	111.3596	81.2355	UNCL	0.120	0.005	2	11,13
J0726.4−4727	111.6093	−47.4815	FSRQ	0.317	-	1	6
J0727.1+3734	111.7480	37.5731	BLLAC	0.456	-	2	1,13
J0728.0+6735	112.2236	67.5410	UNCL	0.963	0.004	2	12b,13
J0728.2+4827	111.9994	48.4557	BLLAC	0.187	0.080	3	3,6,13
J0728.5+6128	112.3457	61.4867	UNCL	0.745	0.290	4	3,4,6,13
J0729.1+5703	112.2068	57.0234	FSRQ	0.268	0.232	3	3,6,13
J0730.4+3308	112.6086	33.1230	BLLAC	0.453	0.440	2	3,13
J0730.7−6602	112.7065	−66.0386	BLLAC	0.068	0.008	2	5,6
J0731.9+2805	112.9697	28.0758	BLLAC	0.161	0.041	7	5,6,7,8,11,12b,13
J0732.7−4638	113.1846	−46.6714	UNCL	0.457	-	1	6
J0733.0+4915	113.2433	49.2826	UNCL	0.668	0.179	3	3,4,13
J0733.1+5910	113.2739	59.1483	UNCL	0.756	0.012	3	11,12b,13
J0733.4+5152	113.3616	51.8989	BLLAC	0.066	0.020	4	4,11,12b,13
J0733.5−5445	113.3948	−54.7616	UNCL	-	-	-	
J0733.6+3649	113.3516	36.8346	BLLAC	0.343	-	1	13
J0733.7+0205c	113.4783	2.0395	UNCL	-	-	-	
J0733.7+4110	113.4450	41.1889	AMB	0.599	0.482	3	1,3,13
J0733.8+0455	113.4894	4.9374	FSRQ	-	-	-	
J0734.0+5021	113.4688	50.3692	FSRQ	0.430	0.558	2	3,13
J0734.4−7711	113.6809	−77.1871	UNCL	-	-	-	
J0737.3−8247	114.2754	−82.8111	UNCL	0.200	-	1	4
J0738.1+1742	114.5308	17.7053	BLLAC	0.299	0.207	2	3,13
J0738.4+1539	114.6040	15.6444	UNCL	-	-	-	
J0739.2+0137	114.8251	1.6179	FSRQ	0.399	0.326	2	3,6
J0739.8−6722	114.8640	−67.3602	UNCL	0.500	-	1	4
J0740.9+3203	115.2748	32.0956	BLLAC	0.146	0.022	8	5,6,7,8,10,11,12b,13
J0741.0+3226	115.2275	32.4336	BLLAC	0.614	0.368	3	1,3,13
J0741.2−5140	115.2103	−51.6255	UNCL	-	-	-	
J0741.4−4709	115.4385	−47.1572	FSRQ	-	-	-	
J0742.1+4902	115.5115	49.0043	FSRQ	0.965	0.291	4	1,3,6,13
J0742.6+5443	115.6658	54.7402	FSRQ	0.451	0.106	3	3,6,13
J0742.9−5242	115.6863	−52.6852	UNCL	-	-	-	
J0743.0−5622	115.8354	−56.3258	FSRQ	-	-	-	
J0743.1+1713	115.7713	17.2401	BLLAC	0.579	0.244	3	1,3,13
J0743.3−4912c	115.7690	−49.1703	UNCL	-	-	-	
J0744.1+7434	116.0224	74.5662	BLLAC	0.046	-	1	13
J0744.2−6918	116.0850	−69.3187	BLLAC	-	-	-	
J0746.0−0039	116.4753	−0.7382	FSRQ	2.278	-	1	3
J0746.3−0225	116.6126	−2.4304	UNCL	0.622	0.509	2	3,6
J0746.4+2546	116.6078	25.8173	FSRQ	1.544	1.074	3	1,3,13
J0746.5+2730	116.6685	27.5831	BLLAC	0.793	0.243	3	1,3,13
J0746.6−4754	116.6763	−47.9154	BLLAC	-	-	-	
J0747.5+0905	116.8425	9.0968	BLLAC	0.194	0.075	3	4,6,13
J0747.5−4927	116.8531	−49.4425	UNCL	0.405	-	1	6
J0748.3+4928	117.1574	49.5114	BLLAC	0.748	0.855	6	3,4,7,8,11,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0748.3+8511	116.8173	85.2024	UNCL	0.246	0.072	2	4,6
J0748.6+2400	117.1505	24.0067	FSRQ	0.441	0.282	3	1,3,13
J0749.2+2314	117.3085	23.2214	BLLAC	0.154	0.026	8	5,6,7,8,10,11,12b,13
J0749.3+4453	117.3204	44.8756	FSRQ	0.618	0.433	4	3,7,8,13
J0749.4+1058	117.3641	10.9592	BLLAC	0.463	0.425	2	3,13
J0749.6+1324	117.3998	13.3656	UNCL	0.859	0.311	5	1,3,4,6,13
J0749.7+7450	117.3732	74.8624	BLLAC	0.168	0.044	2	6,13
J0749.9+1823	117.5014	18.3865	FSRQ	0.764	0.300	3	1,3,13
J0750.8+1229	117.7169	12.5180	FSRQ	0.384	0.392	3	3,6,13
J0751.0+7908	117.6803	79.1547	UNCL	0.543	0.295	3	3,11,13
J0751.0−5131	117.7491	−51.5790	UNCL	0.275	-	1	6
J0751.4+2655	117.9047	26.9522	BLLAC	0.699	0.342	3	1,3,13
J0751.4−0421	117.8446	−4.3607	UNCL	0.269	-	1	11
J0752.2+3313	117.9736	33.2222	FSRQ	1.352	0.833	3	1,3,13
J0753.0+5353	118.2558	53.8832	BLLAC	0.270	0.168	3	3,4,13
J0753.9+0923	118.4664	9.4055	UNCL	0.923	0.010	2	12b,13
J0754.0+0451	118.5238	4.8774	UNCL	0.733	-	1	11
J0754.7+4823	118.6903	48.3974	BLLAC	0.737	0.825	2	3,13
J0756.3−6431	119.1025	−64.5085	UNCL	0.296	-	1	6
J0757.1+0956	119.2777	9.9430	BLLAC	0.637	0.704	2	3,13
J0758.1+1134	119.5319	11.6128	FSRQ	0.429	0.225	3	1,3,13
J0758.7+3746	119.6171	37.7866	MIS	0.034	0.022	7	5,6,7,8,10,12b,13
J0758.9+2703	119.6958	27.0877	BLLAC	0.112	0.021	5	5,6,7,8,13
J0759.6+1321	119.9006	13.3549	BLLAC	0.693	0.822	3	3,6,13
J0800.3+5611	120.0647	56.1854	UNCL	0.621	0.289	4	3,4,6,13
J0800.9+4401	120.2845	44.0195	BLLAC	0.682	0.300	3	1,3,13
J0801.1+1335	120.3127	13.6118	BLLAC	0.686	0.305	2	1,13
J0801.1+6444	120.2594	64.7471	BLLAC	0.188	0.035	3	4,6,13
J0801.3+6631	120.4016	66.6528	UNCL	0.681	0.393	4	1,3,4,13
J0802.0+1006	120.4975	10.0934	BLLAC	-	-	-	
J0802.3−0942	120.5653	−9.7139	UNCL	-	-	-	
J0803.0+2439	120.7804	24.6308	BLLAC	0.722	0.475	3	1,3,13
J0803.2−0337	120.8003	−3.6002	UNCL	0.542	0.431	2	3,6
J0803.5+2046	120.7778	20.6415	FSRQ	1.442	0.775	3	1,3,13
J0804.5+0414	121.1813	4.2361	UNCL	0.482	0.200	3	3,4,13
J0804.9−0624	121.2406	−6.4073	UNCL	0.300	-	1	4
J0805.0+6746	121.2573	67.7670	UNCL	0.740	0.244	3	3,4,13
J0805.1+7744	121.6559	77.7687	UNCL	1.573	0.383	3	3,4,13
J0805.2−0110	121.3037	−1.1872	FSRQ	0.969	0.659	3	3,6,13
J0805.4+6147	121.3257	61.7399	FSRQ	1.250	0.595	2	3,13
J0805.4+7534	121.3610	75.5736	BLLAC	0.088	0.011	3	5,6,13
J0805.9+3834	121.4657	38.5939	BLLAC	0.576	0.151	3	1,3,13
J0806.1−0458	121.5366	−4.9032	UNCL	0.865	0.354	2	3,4
J0806.5+4503	121.6395	45.0756	FSRQ	1.181	0.489	3	1,3,13
J0806.5+5930	121.6081	59.5186	BLLAC	0.159	0.073	5	4,5,6,11,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0807.0−6102	121.7054	−61.0250	UNCL	-	-	-	
J0807.1−0541	121.7901	−5.6872	BLLAC	0.837	-	1	3
J0807.2−7630	121.8752	−76.4866	UNCL	0.481	-	1	6
J0807.7−1206	121.9000	−12.1288	UNCL	1.105	0.141	2	3,4
J0808.2−0751	122.0647	−7.8527	FSRQ	1.068	-	1	3
J0808.5+4950	122.1653	49.8435	FSRQ	1.190	1.427	2	3,13
J0809.3+4053	122.2361	40.8791	FSRQ	0.750	0.579	4	1,3,6,13
J0809.5+5341	122.4239	53.6903	FSRQ	0.803	0.298	3	1,3,13
J0809.6+3455	122.4120	34.9270	BLLAC	0.068	0.010	8	5,6,7,8,10,11,12b,13
J0809.8+5218	122.4549	52.3162	BLLAC	0.055	0.026	2	6,13
J0811.0−7529	122.7634	−75.5077	BLLAC	-	-	-	
J0811.4+0146	122.8613	1.7812	BLLAC	0.579	0.550	3	1,3,13
J0812.0+0237	123.0077	2.6259	BLLAC	0.130	0.035	6	5,6,7,8,12b,13
J0812.3+1143	123.1084	11.6996	BLLAC	0.463	0.064	4	1,3,6,13
J0812.5+0711	123.1576	7.2002	UNCL	0.908	0.261	4	1,3,4,13
J0812.6+2821	123.1302	28.3490	BLLAC	0.909	0.770	4	1,3,6,13
J0812.8+6507	123.1702	65.1531	BLLAC	0.170	0.039	7	4,6,7,8,11,12b,13
J0812.9+5555	123.2144	55.9060	BLLAC	0.288	0.086	4	1,3,6,13
J0813.7−0356	123.4086	−3.9548	UNCL	0.256	0.058	2	4,6
J0814.2−1013	123.5487	−10.2029	BLLAC	0.767	0.860	2	3,6
J0814.4+2941	123.6079	29.6877	FSRQ	0.454	0.182	3	1,3,13
J0814.4+6926	123.5249	69.4413	UNCL	0.630	0.227	2	4,13
J0814.6+6430	123.6633	64.5228	BLLAC	0.213	0.118	4	3,5,6,13
J0815.6+3641	123.8581	36.5875	FSRQ	0.743	0.468	3	1,3,13
J0815.9+2951	123.9019	29.8394	BLLAC	0.259	0.037	6	6,7,8,11,12b,13
J0816.1+4909	124.0399	49.1679	BLLAC	0.371	0.267	2	3,13
J0816.3+5739	124.0947	57.6525	BLLAC	0.404	0.403	2	3,13
J0816.4−1311	124.1133	−13.1980	BLLAC	-	-	-	
J0816.9+2050	124.2074	20.8518	BLLAC	0.867	0.973	2	3,13
J0817.1+1955	124.2729	19.9786	AMB	0.611	0.211	3	1,3,13
J0817.8+3243	124.4625	32.7279	BLLAC	0.752	0.244	3	1,3,13
J0817.8−0934	124.4573	−9.5585	BLLAC	1.024	-	1	3
J0818.2+4222	124.5667	42.3793	BLLAC	0.610	0.683	2	3,13
J0818.4+2816	124.6140	28.2341	BLLAC	0.176	0.149	4	3,6,11,13
J0818.7+3153	124.6669	31.8967	BLLAC	0.671	0.326	3	1,3,13
J0818.8+3229	124.7597	32.4437	FSRQ	0.787	0.161	4	1,3,12b,13
J0819.0+2746	124.8286	27.7919	BLLAC	0.578	0.277	3	1,3,13
J0819.4+4035	124.8579	40.6289	BLLAC	0.365	0.112	5	1,3,6,12b,13
J0819.4−0756	124.8233	−7.9406	BLLAC	0.299	0.117	2	3,6
J0820.3+3639	125.0841	36.6679	BLLAC	0.447	0.249	4	1,3,6,13
J0820.9+2353	125.2133	23.8959	BLLAC	0.267	0.099	5	1,3,6,12b,13
J0820.9−1258	125.2394	−12.9831	BLLAC	1.094	-	1	3
J0821.1+1007	125.2284	10.1026	FSRQ	1.282	0.568	3	1,3,13
J0823.1+4042	125.7398	40.6972	FSRQ	0.573	0.343	3	1,3,13
J0823.1−6330	125.8108	−63.4917	UNCL	0.202	0.011	2	5,6

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0823.3+2224	125.8532	22.3842	BLLAC	0.719	0.503	4	1,3,6,13
J0824.4+2440	126.1375	24.6453	FSRQ	0.841	0.118	3	1,3,13
J0824.7+5552	126.1968	55.8785	FSRQ	0.970	0.559	3	1,3,13
J0824.9+3915	126.2312	39.2783	FSRQ	0.640	0.619	2	3,13
J0825.8+0309	126.4597	3.1568	BLLAC	0.817	0.528	3	1,3,13
J0826.4−6404	126.6161	−64.0709	UNCL	0.204	0.006	2	4,6
J0827.0−0708	126.7757	−7.1461	BLLAC	0.120	0.028	3	5,6,13
J0827.8+5221	126.9737	52.2995	FSRQ	0.329	0.068	6	3,6,7,8,12b,13
J0828.0+2307	127.0048	23.2049	BLLAC	0.453	0.101	3	1,6,13
J0828.3+4152	127.0592	41.8977	BLLAC	0.179	0.031	6	6,7,8,11,12b,13
J0828.6−0747	127.2270	−7.8152	UNCL	0.415	0.003	3	6,12b,13
J0829.0+1755	127.2701	17.9044	MIS	0.075	0.018	8	5,6,7,8,10,11,12b,13
J0829.4+0857	127.3763	8.9726	MIS	0.601	0.249	5	3,6,7,8,13
J0829.6−1140	127.4132	−11.6843	UNCL	0.386	0.248	2	3,4
J0829.7−5856	127.3799	−58.9335	UNCL	-	-	-	
J0830.0+5231	127.5455	52.5075	BLLAC	0.198	0.021	6	6,7,8,11,12b,13
J0830.1−0946	127.5631	−9.7488	UNCL	0.500	-	1	4
J0830.8+2410	127.7170	24.1833	FSRQ	0.584	0.738	2	3,13
J0831.4+2631	127.8264	26.5070	UNCL	1.046	0.405	2	3,13
J0831.5+1747	127.8877	17.7752	BLLAC	0.539	0.485	5	1,3,4,6,13
J0831.8+0429	127.9537	4.4942	BLLAC	0.196	0.121	3	3,6,13
J0832.2+2753	128.0819	27.8789	UNCL	0.255	0.289	2	6,13
J0832.4+4912	128.0967	49.2225	BLLAC	0.330	0.219	4	1,3,6,13
J0833.4−0458	128.3270	−4.9165	FSRQ	2.212	1.511	3	1,3,13
J0833.9+4223	128.4745	42.4005	CLAGN	0.941	1.084	2	3,13
J0834.6+4402	128.7425	44.0606	BLLAC	0.518	0.552	2	3,13
J0835.0+6243	128.7258	62.8302	UNCL	1.635	1.020	2	4,13
J0835.2−2243	128.6842	−22.6869	FSRQ	1.121	-	1	3
J0835.7+0936	128.9301	9.6217	BLLAC	0.544	0.118	3	1,3,13
J0836.2+2141	129.0676	21.6510	UNCL	0.776	0.262	4	1,3,4,13
J0836.5−2026	129.1634	−20.2832	FSRQ	2.497	-	1	3
J0837.3+1458	129.3530	14.9722	BLLAC	0.152	0.080	5	6,7,8,12b,13
J0839.4+1803	129.8780	18.0464	BLLAC	0.289	0.177	3	3,6,13
J0839.7+3540	129.9307	35.6671	BLLAC	0.546	0.418	3	1,3,13
J0839.8+0105	129.9567	1.0741	FSRQ	0.707	0.502	4	1,3,6,13
J0840.8+1317	130.1983	13.2065	MIS	0.757	0.022	3	1,3,13
J0841.3+7053	130.3515	70.8950	FSRQ	1.085	1.376	2	3,13
J0842.3−6053	130.6107	−60.8973	UNCL	-	-	-	
J0842.5+0251	130.6063	2.8813	BLLAC	0.233	0.089	7	6,7,8,11,12b,12c,13
J0842.7+6656	130.6800	66.9581	BLLAC	0.185	0.052	4	6,11,12b,13
J0843.0−0853	130.8888	−8.8162	UNCL	1.214	1.048	2	4,13
J0844.2+5312	131.0487	53.2141	BLLAC	0.360	0.197	3	1,3,13
J0845.4+0442	131.3214	4.6632	UNCL	0.597	0.189	5	1,3,4,6,13
J0846.5−2609	131.7359	−26.1307	UNCL	-	-	-	
J0846.9+4608	131.8929	46.1578	FSRQ	0.835	0.567	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0847.0−2336	131.7565	−23.6171	BLLAC	0.045	0.009	3	5,6,11
J0847.2+1134	131.8039	11.5639	BLLAC	0.133	0.052	4	6,7,8,13
J0847.9−0702	131.9864	−7.0547	BLLAC	0.441	0.400	2	3,13
J0848.0−0524	131.9947	−5.3428	FSRQ	0.882	0.244	2	3,13
J0848.7+0508	132.1653	5.1050	BLLAC	0.305	0.264	2	1,13
J0848.7+7017	132.1646	70.2910	BLLAC	0.811	0.378	2	3,13
J0848.9+0205	132.2867	2.1062	BLLAC	0.636	0.361	4	1,3,6,13
J0849.1+6607	132.2276	66.1026	BLLAC	0.094	-	1	13
J0849.5+0456	132.3856	4.9188	BLLAC	0.531	0.540	2	3,13
J0850.0+4855	132.5015	48.9163	BLLAC	0.442	0.287	3	1,3,13
J0850.0+5108	132.4916	51.1414	NLS1	0.508	0.210	4	3,5,6,13
J0850.1−1212	132.5401	−12.2265	FSRQ	1.320	-	1	3
J0850.5+3455	132.6508	34.9230	BLLAC	0.101	0.023	8	5,6,7,8,10,11,12b,13
J0851.5+5528	132.8997	55.4762	BLLAC	0.569	0.436	3	1,3,13
J0852.2+2834	133.0215	28.5666	FSRQ	1.138	0.553	3	1,3,13
J0854.0+2753	133.5424	27.9060	BLLAC	0.399	0.088	6	6,7,8,11,12b,13
J0854.3+4408	133.5412	44.1417	BLLAC	0.093	-	1	13
J0854.8+2006	133.7036	20.1085	BLLAC	0.524	0.616	2	3,13
J0855.4−0714	133.7895	−7.2508	UNCL	0.827	0.615	2	3,13
J0855.9+7144	134.2286	71.7733	FSRQ	0.943	0.205	2	3,13
J0856.6−1105	134.1742	−11.0873	BLLAC	1.205	-	1	3
J0856.8+2056	134.1656	20.9621	BLLAC	0.376	0.202	4	1,3,6,13
J0856.8+8559	134.4231	86.0624	UNCL	0.679	0.639	2	3,4
J0857.7+0137	134.4575	1.5918	BLLAC	0.175	0.063	8	3,5,6,7,8,11,12b,13
J0857.9−1949	134.5223	−19.8436	FSRQ	0.911	-	1	3
J0858.1+1405	134.6727	14.1624	MIS	1.008	0.225	3	1,3,13
J0859.4+6218	134.8777	62.2918	BLLAC	0.346	0.158	3	1,3,13
J0859.4+8345	134.7920	83.7500	BLLAC	0.479	0.440	5	1,3,6,12b,13
J0900.6−7408	134.9971	−74.2336	UNCL	0.300	-	1	4
J0900.7−1243	135.1657	−12.7091	UNCL	0.479	0.172	3	3,4,6
J0901.2+6742	135.1611	67.7065	BLLAC	0.970	0.512	3	3,6,13
J0901.4+4542	135.5331	45.7425	BLLAC	0.243	0.048	5	7,8,11,12b,13
J0901.5+6711	135.3910	67.2214	UNCL	0.566	0.075	3	3,4,13
J0902.4+2051	135.6121	20.8462	BLLAC	0.560	0.459	2	3,13
J0902.4+6440	135.7258	64.7441	BLLAC	1.158	0.714	3	1,3,13
J0903.1+4652	135.7666	46.8511	FSRQ	0.743	0.463	4	1,3,6,13
J0904.0+2724	135.8876	27.3244	FSRQ	1.026	0.688	4	1,3,6,13
J0904.6+4238	136.0651	42.6347	FSRQ	0.877	0.377	3	1,3,13
J0905.6+1358	136.3958	13.9684	BLLAC	1.063	1.267	2	3,13
J0906.2−1707	136.5905	−17.1068	UNCL	0.413	0.091	3	3,4,6
J0906.3−0905	136.5752	−9.0958	BLLAC	0.864	0.585	2	3,13
J0906.7+4950	136.7146	49.8767	FSRQ	0.701	0.441	4	3,7,8,13
J0908.9+2311	137.2526	23.1869	BLLAC	0.539	0.542	3	3,6,13
J0909.1+0121	137.2920	1.3599	FSRQ	0.569	0.712	2	3,13
J0909.6+0159	137.4160	2.0015	BLLAC	0.546	0.370	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0909.7+3104	137.4720	31.1009	BLLAC	0.139	0.036	7	5,6,7,8,11,12b,13
J0909.7−0230	137.4372	−2.5251	FSRQ	0.571	0.193	3	1,6,13
J0910.0+4257	137.3896	42.8962	CLAGN	0.374	0.202	5	1,3,6,12b,13
J0910.6+2247	137.6756	22.8099	FSRQ	0.910	0.137	3	1,3,13
J0910.6+3329	137.6543	33.4901	BLLAC	0.609	0.774	2	3,13
J0910.8+3859	137.7168	39.0339	BLLAC	0.217	0.166	3	3,6,13
J0911.7+3349	137.9490	33.8213	BLLAC	0.298	0.106	5	3,7,8,12b,13
J0912.2+2800	138.0467	27.9911	BLLAC	0.903	0.715	3	1,3,13
J0912.2+4127	138.0484	41.4359	FSRQ	0.816	0.239	3	1,3,13
J0912.2−2751	138.1316	−27.8714	UNCL	1.754	0.061	2	3,4
J0912.5+1556	138.1275	15.9244	BLLAC	0.155	0.025	3	11,12b,13
J0912.9−2102	138.2509	−21.0558	BLLAC	0.074	0.018	2	5,6
J0913.3+8133	138.3424	81.5516	BLLAC	0.540	0.224	4	1,6,12b,13
J0914.1−0202	138.5344	−1.9959	UNCL	0.519	0.183	3	1,4,13
J0914.4+0249	138.6580	2.7665	FSRQ	0.543	0.183	4	1,3,12c,13
J0915.4−3027	138.9204	−30.4971	UNCL	-	-	-	
J0915.9+2933	138.9683	29.5567	BLLAC	0.035	-	1	13
J0916.7+3856	139.2038	38.9078	FSRQ	1.064	0.859	3	1,3,13
J0916.7+5238	139.2164	52.6412	BLLAC	0.133	0.035	7	5,6,7,8,11,12b,13
J0917.1−2131	139.3626	−21.5262	FSRQ	0.950	-	1	3
J0917.3−0342	139.3108	−3.7207	BLLAC	0.172	0.023	3	6,12b,13
J0918.9−0625	139.6665	−6.4747	UNCL	0.783	0.133	4	3,4,12b,13
J0919.3−2202	139.8593	−22.0119	UNCL	0.491	0.159	3	3,4,6
J0920.3−0443	140.1234	−4.6599	UNCL	0.896	0.417	3	3,4,13
J0920.9+4441	140.2436	44.6983	FSRQ	0.560	0.598	3	3,6,13
J0920.9−2256	140.2395	−22.9560	UNCL	0.181	-	1	6
J0921.6+6216	140.4010	62.2645	FSRQ	0.942	0.614	3	1,3,13
J0921.7+2336	140.4391	23.5967	BLLAC	0.555	0.372	3	1,3,13
J0922.4−0528	140.5986	−5.4853	AMB	0.480	0.341	3	3,6,13
J0922.6+0434	140.6136	4.5608	UNCL	0.656	0.317	4	1,3,11,13
J0922.6+4454	140.6459	44.9636	SEY	0.904	0.656	5	1,3,6,12b,13
J0923.5+3852	140.8102	38.8278	UNCL	0.790	0.204	2	11,13
J0923.5+4125	140.8804	41.4243	FSRQ	0.639	0.176	3	1,3,13
J0924.0+0534	141.0043	5.5626	BLLAC	0.432	0.273	4	1,3,6,13
J0924.0+2816	140.9647	28.2570	FSRQ	0.651	0.253	4	1,3,6,13
J0925.7+3126	141.4319	31.4530	BLLAC	0.391	0.120	4	1,3,6,13
J0925.7+5959	141.4287	59.9713	BLLAC	1.185	0.811	3	3,4,13
J0926.4+5412	141.6620	54.1907	BLLAC	0.608	0.225	3	1,3,13
J0927.2+2454	141.8453	24.9370	BLLAC	0.649	0.338	3	1,3,13
J0928.1−2035	141.9659	−20.5809	FSRQ	0.341	0.215	2	3,6
J0928.2−3048	142.1416	−30.8289	UNCL	-	-	-	
J0928.4−0415	142.1395	−4.1525	UNCL	0.733	0.089	3	3,4,13
J0928.5+4048	142.1560	40.8126	BLLAC	0.747	0.419	3	1,3,13
J0928.7−3529	142.2076	−35.4969	UNCL	-	-	-	
J0929.3+5014	142.3143	50.2267	BLLAC	0.339	0.327	2	3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0929.3−2414	142.3677	−24.2758	BLLAC	0.152	0.039	3	3,6,11
J0929.6+4621	142.3448	46.3462	UNCL	0.439	0.161	6	3,4,6,7,8,13
J0930.3+8612	142.4294	86.2059	BLLAC	1.347	-	1	3
J0930.5+4951	142.6566	49.8404	BLLAC	0.158	0.048	5	6,7,8,12b,13
J0930.7+3502	142.7303	35.0604	BLLAC	0.978	0.074	2	3,13
J0930.9+0033	142.7177	0.5830	FSRQ	0.742	0.228	3	1,3,13
J0930.9−1015	142.7613	−10.2236	UNCL	0.536	0.084	3	3,4,6
J0931.2−8533	142.6357	−85.5666	UNCL	0.205	-	1	6
J0931.9+6737	142.9870	67.6147	BLLAC	0.879	0.755	4	1,3,6,13
J0932.6+5306	143.1715	53.1094	NLS1	0.560	0.378	3	1,3,13
J0932.7+1041	143.1640	10.7098	BLLAC	0.192	0.041	5	6,7,8,12b,13
J0934.3+3926	143.5278	39.4423	BLLAC	0.748	0.258	3	1,3,13
J0934.5−1720	143.6257	−17.3560	BLLAC	0.177	0.025	3	11,12b,13
J0935.3−1736	143.8116	−17.6163	BLLAC	0.341	0.211	4	3,4,6,13
J0936.3−2111	144.0562	−21.1952	UNCL	0.699	-	1	11
J0936.5+1847	144.1153	18.8343	BLLAC	0.561	0.274	4	1,3,6,13
J0937.1+5008	144.3014	50.1478	SEY	0.384	0.216	4	1,3,6,13
J0937.9−1434	144.4780	−14.5640	BLLAC	0.305	-	1	6
J0939.3−1732	144.8300	−17.5266	FSRQ	0.784	0.496	2	3,13
J0940.0−2828	145.0204	−28.4916	UNCL	-	-	-	
J0940.4+6148	145.0936	61.8073	BLLAC	0.168	0.033	5	6,7,8,12b,13
J0940.9−1335	145.2606	−13.5975	FSRQ	0.515	0.439	2	3,6
J0941.7+4125	145.4569	41.3513	FSRQ	0.606	0.096	3	1,3,13
J0941.9+2724	145.4684	27.3716	BLLAC	0.546	0.217	4	1,3,6,13
J0942.3+2842	145.5971	28.7373	BLLAC	0.329	0.077	7	3,6,7,8,11,12b,13
J0942.3−0800	145.5894	−7.9981	BLLAC	0.531	0.390	3	3,6,13
J0943.7+6137	146.0852	61.5973	FSRQ	0.686	0.442	3	1,3,13
J0944.2+5557	146.1728	55.9647	BLLAC	0.423	0.216	3	1,3,13
J0945.2+5200	146.2173	52.0428	FSRQ	0.676	0.439	3	1,3,13
J0945.5+4635	146.4254	46.6141	MIS	0.645	0.059	6	3,7,8,11,12b,13
J0945.7+5759	146.4260	57.9632	BLLAC	0.216	0.239	7	3,5,6,7,8,10,13
J0946.0+4735	146.5186	47.5862	BLLAC	0.575	0.140	3	1,3,13
J0946.2+0104	146.5842	1.0811	BLLAC	0.457	0.213	5	1,8,12b,12c,13
J0946.6+1016	146.6461	10.2850	FSRQ	0.895	0.179	3	1,3,13
J0947.1−2541	146.7897	−25.6833	UNCL	-	-	-	
J0947.6+2215	146.9108	22.2593	BLLAC	0.498	0.072	3	1,3,13
J0947.9+1121	146.9412	11.3392	BLLAC	0.176	0.034	5	7,8,11,12b,13
J0948.6−0338	147.1836	−3.6404	UNCL	0.882	0.249	4	3,4,6,13
J0948.9+0022	147.2388	0.3738	NLS1	0.409	0.273	4	1,3,6,13
J0949.0+4038	147.2306	40.6624	FSRQ	0.621	0.750	2	3,13
J0949.2+1749	147.4157	17.8804	FSRQ	0.702	0.119	3	3,6,13
J0949.7+5819	147.4159	58.3203	FSRQ	0.820	0.499	2	1,13
J0950.2+0615	147.5144	6.2511	BLLAC	0.615	0.383	4	1,3,8,13
J0950.2+4553	147.5492	45.8889	BLLAC	0.409	0.245	3	1,3,13
J0952.1+3932	148.0613	39.6044	BLLAC	0.777	0.374	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J0952.2+7503	148.1006	75.0371	BLLAC	0.175	0.035	4	6,11,12b,13
J0952.8+0712	148.2066	7.2250	BLLAC	0.507	0.135	4	1,3,6,13
J0953.0−0840	148.2613	−8.6718	BLLAC	0.743	0.891	2	3,13
J0953.4−7659	148.2681	−76.9672	BLLAC	0.130	-	1	6
J0954.2+4913	148.5408	49.2497	BLLAC	0.964	0.706	3	1,3,13
J0955.1+3551	148.7828	35.8502	BLLAC	0.405	0.169	5	6,7,8,12b,13
J0955.2+0835	148.7578	8.5617	BLLAC	0.630	0.267	4	1,3,6,13
J0956.0+3936	149.0357	39.5878	FSRQ	1.233	0.072	3	1,3,13
J0956.5−0958	149.1176	−9.9553	BLLAC	0.140	0.032	3	5,6,11
J0956.7+2516	149.2078	25.2545	FSRQ	0.517	0.329	3	1,3,13
J0957.3−1348	149.3258	−13.8337	FSRQ	0.617	0.548	2	3,6
J0957.6+5523	149.4091	55.3827	FSRQ	0.552	0.610	2	3,13
J0957.8+3423	149.4437	34.3709	BLLAC	0.279	0.214	2	6,13
J0958.0+3222	149.5873	32.4006	NLS1	1.344	1.776	2	3,13
J0958.0+4728	149.5820	47.4188	FSRQ	1.144	0.738	3	1,3,13
J0958.0−0319	149.5250	−3.2945	BLLAC	0.554	0.117	4	1,3,4,13
J0958.1−6753	149.5544	−67.8785	UNCL	0.174	0.035	2	4,6
J0958.3−2656	149.6025	−26.9267	AMB	0.006	0.004	2	5,6
J0958.4+5042	149.6575	50.6660	FSRQ	0.832	0.519	3	1,3,13
J0958.4−2441	149.5853	−24.7332	UNCL	0.986	0.019	2	3,4
J0958.7+6534	149.6969	65.5652	BLLAC	0.588	0.648	2	3,13
J0958.8+7039	149.7076	70.6665	UNCL	0.240	0.050	5	4,6,11,12b,13
J0959.4+2120	149.8745	21.3892	BLLAC	0.228	0.070	6	3,6,7,8,12b,13
J0959.6+4606	149.8325	46.0644	SEY	0.167	0.010	5	3,6,11,12b,13
J1001.1+2911	150.2925	29.1938	FSRQ	1.010	0.548	2	3,13
J1002.5+2215	150.6434	22.2708	BLLAC	0.616	0.328	4	1,3,6,13
J1003.4+0205	150.8608	2.0822	BLLAC	0.786	0.617	3	1,3,13
J1003.6+2605	150.9260	26.0869	BLLAC	0.606	0.141	3	1,3,13
J1003.6−2137	150.9287	−21.6359	UNCL	0.149	0.024	6	4,5,6,11,12b,13
J1006.5+6440	151.5509	64.6699	BLLAC	0.732	0.727	3	1,3,13
J1006.7−2159	151.6934	−21.9890	FSRQ	0.159	0.046	3	3,6,13
J1007.0+3455	151.7353	34.9126	BLLAC	0.640	0.537	3	1,3,13
J1007.6−3332	151.8808	−33.5519	FSRQ	0.575	-	1	6
J1008.0+0028	152.0477	0.5000	MIS	0.076	0.022	10	3,5,6,7,8,10,11,12b,12c,13
J1008.0+0620	152.0034	6.3559	BLLAC	0.389	0.363	3	3,6,13
J1008.1+4706	152.0475	47.0892	BLLAC	0.294	0.045	5	6,7,8,12b,13
J1008.7−2909	152.1880	−29.2122	UNCL	1.670	-	1	3
J1008.8−3139	152.2106	−31.6515	BLLAC	0.542	0.211	2	4,6
J1010.2−3119	152.5666	−31.3190	BLLAC	0.100	0.023	2	5,6
J1010.8−0158	152.7153	−2.0054	FSRQ	0.590	0.408	3	1,3,13
J1011.3−0427	152.8760	−4.3910	FSRQ	0.970	1.185	2	3,13
J1012.3+0629	153.0556	6.5159	AMB	0.664	0.711	2	3,13
J1012.3−1232	153.0627	−12.5611	UNCL	0.853	0.203	2	3,4
J1012.7+2439	153.1724	24.6565	FSRQ	1.433	0.552	3	1,3,13
J1012.7+4228	153.1846	42.4992	MIS	0.229	0.132	4	1,6,12b,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1013.3−2551	153.3046	−25.7819	UNCL	1.584	-	1	3
J1013.4−4006	153.3315	−40.0966	UNCL	-	-	-	
J1013.7+3444	153.4567	34.7641	FSRQ	0.765	0.478	3	1,3,13
J1014.3+4112	153.5745	41.2049	UNCL	0.732	0.214	5	3,4,7,8,13
J1014.8+2257	153.6961	23.0213	FSRQ	0.684	0.874	2	3,13
J1014.8−0537	153.6919	−5.6797	UNCL	0.589	0.364	3	3,4,13
J1015.0+4926	153.7672	49.4335	BLLAC	0.270	0.281	4	3,4,6,13
J1015.6+5553	153.9351	55.8502	FSRQ	0.963	0.177	3	1,3,13
J1016.0+0512	154.0131	5.2173	FSRQ	1.311	0.414	3	1,3,13
J1016.4+7703	154.2024	77.0455	UNCL	0.683	0.161	3	3,4,13
J1016.5−2650	154.1446	−26.8499	UNCL	0.690	0.014	2	3,4
J1017.3+5204	154.2778	52.0464	BLLAC	0.282	0.090	6	3,6,7,8,12b,13
J1017.4+2538	154.3516	25.6656	BLLAC	0.278	0.063	6	6,7,8,11,12b,13
J1017.8+0715	154.5887	7.2521	FSRQ	0.739	0.223	4	1,3,6,13
J1018.1+1905	154.5330	19.1043	BLLAC	0.584	0.230	3	1,3,13
J1018.3−3124	154.6198	−31.3983	FSRQ	-	-	-	
J1018.4+0528	154.6160	5.5083	FSRQ	1.261	0.428	3	1,3,13
J1018.4+3540	154.5458	35.7110	FSRQ	0.857	0.551	3	1,3,13
J1018.8+5913	154.7439	59.1911	BLLAC	0.664	0.302	2	3,13
J1018.9+1043	154.7416	10.6071	AMB	0.662	0.191	3	1,3,13
J1019.7+6321	154.9620	63.3338	BLLAC	0.452	0.240	3	1,3,13
J1021.1+1626	155.2515	16.4317	BLLAC	0.566	0.245	3	1,3,13
J1021.4+8021	155.5088	80.3972	UNCL	0.771	0.429	4	3,7,8,13
J1021.9+5123	155.5526	51.4001	AMB	0.153	0.021	6	6,7,8,11,12b,13
J1022.4−4231	155.5766	−42.5353	UNCL	-	-	-	
J1022.7−0112	155.6822	−1.2173	BLLAC	0.117	-	1	13
J1023.1+3949	155.7982	39.8043	FSRQ	0.864	0.529	3	1,3,13
J1023.2+2859	155.8502	28.9475	FSRQ	0.556	0.144	5	3,6,7,8,13
J1023.8+3002	155.9156	30.0160	BLLAC	0.275	0.213	2	1,13
J1023.8−4335	155.9850	−43.6006	BLLAC	-	-	-	
J1023.9−3236	156.0018	−32.5711	FSRQ	-	-	-	
J1024.8+2332	156.2235	23.5428	SEY	0.219	0.202	6	3,6,7,8,11,13
J1026.9+0608	156.7642	6.1594	BLLAC	0.302	0.070	5	6,7,8,12b,13
J1026.9−1749	156.7441	−17.8164	BLLAC	0.118	-	1	6
J1027.0−8542	156.6432	−85.7206	BLLAC	-	-	-	
J1027.2+7427	156.8506	74.4739	FSRQ	0.679	0.216	2	3,13
J1027.6+1828	156.9376	18.5274	UNCL	0.461	0.207	4	1,3,4,13
J1027.6+6317	156.8540	63.2981	BLLAC	0.816	0.652	3	1,3,13
J1027.6+8251	157.1750	82.8946	UNCL	0.875	0.307	3	3,4,13
J1027.9+0252	157.0850	2.9229	FSRQ	0.663	0.132	7	3,6,7,8,12b,12c,13
J1028.3+3108	157.0734	31.1262	BLLAC	0.237	0.031	6	3,6,7,8,12b,13
J1028.4−0234	157.1418	−2.6166	FSRQ	0.934	0.318	4	1,3,12b,13
J1030.2−8403	157.5637	−84.0524	UNCL	-	-	-	
J1030.4−3001	157.6292	−30.0613	UNCL	0.584	0.047	3	6,12b,13
J1030.6−2028	157.6684	−20.5101	BLLAC	0.877	0.770	2	3,4

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1031.1+7442	157.8418	74.6995	FSRQ	0.107	-	1	13
J1031.3+5053	157.8272	50.8933	BLLAC	0.106	0.046	3	5,6,13
J1031.6+6019	157.9365	60.3418	FSRQ	0.930	0.562	3	1,3,13
J1031.8−2609	157.9079	−26.1213	UNCL	0.219	0.043	5	4,6,11,12b,13
J1032.6+3737	158.1697	37.6408	BLLAC	0.502	0.501	2	3,13
J1032.7+6624	158.1628	66.3898	BLLAC	0.681	0.410	3	1,3,13
J1033.1+4115	158.2654	41.2684	FSRQ	0.320	0.167	3	1,3,13
J1033.5+4221	158.3246	42.3764	BLLAC	0.194	0.034	7	5,6,7,8,11,12b,13
J1033.7+3708	158.4433	37.1403	BLLAC	0.333	0.075	6	6,7,8,11,12b,13
J1033.9+6050	158.4643	60.8520	FSRQ	0.744	0.452	4	1,3,6,13
J1034.0−2547	158.4627	−25.7522	UNCL	1.135	0.321	2	3,13
J1035.3+5541	158.9398	55.7151	BLLAC	0.883	0.268	3	1,3,13
J1035.3−2050	158.8137	−20.8406	UNCL	-	-	-	
J1036.2+2202	159.1374	22.0534	FSRQ	0.633	0.457	3	1,3,13
J1036.5+1231	159.1682	12.5607	BLLAC	0.529	0.369	3	1,3,13
J1036.6−3741	159.2227	−37.7375	FSRQ	-	-	-	
J1037.0−1954	159.2332	−19.9066	UNCL	0.302	0.003	2	4,6
J1037.4−2933	159.3170	−29.5674	CLAGN	0.351	0.326	2	3,13
J1037.7+5711	159.4346	57.1988	BLLAC	1.137	1.393	2	3,13
J1037.7−2822	159.4269	−28.3845	FSRQ	1.028	-	1	3
J1038.2−2425	159.6003	−24.3986	UNCL	1.007	0.372	3	3,12b,13
J1038.5+3926	159.6912	39.4597	BLLAC	0.490	0.297	3	1,3,13
J1039.6+0535	159.9196	5.6025	BLLAC	0.361	0.109	5	6,7,8,12b,13
J1039.7−1540	159.7779	−15.6852	FSRQ	0.615	0.076	2	3,6
J1039.9+7326	159.9146	73.4325	UNCL	0.666	0.447	3	3,4,13
J1040.5+0617	160.1318	6.2894	BLLAC	1.114	0.735	4	1,3,8,13
J1041.0+1342	160.2432	13.6974	UNCL	1.156	1.051	2	1,3
J1041.1−1201	160.2857	−12.0586	UNCL	0.347	0.071	3	3,4,6
J1041.7+3902	160.4548	39.0221	BLLAC	0.169	0.035	8	5,6,7,8,10,11,12b,13
J1041.9−0557	160.5179	−5.9713	BLLAC	0.167	0.038	4	6,11,12b,13
J1042.1−4128	160.5126	−41.4916	UNCL	0.300	-	1	4
J1042.9+0054	160.7660	0.9057	BLLAC	0.329	0.187	5	6,7,8,12c,13
J1043.2+2408	160.7876	24.1432	CLAGN	0.411	0.416	2	3,13
J1043.6+0654	160.8495	6.8861	BLLAC	1.213	0.859	3	1,3,13
J1044.6+8053	161.0961	80.9110	FSRQ	0.683	0.379	2	3,13
J1045.3+2751	161.3179	27.8593	BLLAC	0.842	0.519	4	1,3,4,13
J1045.8−2928	161.4193	−29.4573	FSRQ	0.680	0.199	2	3,6
J1046.0+5448	161.6200	54.8290	AMB	0.196	0.032	5	7,8,11,12b,13
J1046.8−2534	161.7142	−25.5958	BLLAC	0.182	0.021	3	6,12b,13
J1047.7+7238	161.9480	72.6369	BLLAC	0.437	0.374	3	3,6,13
J1047.9+0055	162.0323	0.9287	AMB	0.632	0.163	6	1,3,6,12b,12c,13
J1047.9−3738	161.9872	−37.6252	UNCL	-	-	-	
J1048.0−1912	162.0276	−19.1599	NLS1	0.847	-	1	3
J1048.4+7143	162.1151	71.7266	FSRQ	0.692	0.782	2	3,13
J1049.5+1548	162.4140	15.8104	BLLAC	0.136	-	1	13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1049.7+5011	162.2400	50.1625	BLLAC	0.305	0.096	6	3,6,7,8,12b,13
J1049.8+1429	162.4430	14.4940	UNCL	0.949	0.371	3	1,3,13
J1050.1+0432	162.5419	4.5470	FSRQ	0.822	0.552	3	1,3,13
J1051.4+3942	162.8557	39.7238	BLLAC	0.344	0.188	4	1,3,6,13
J1051.4−3139	162.7699	−31.6373	FSRQ	-	-	-	
J1051.6+2109	162.9533	21.3312	FSRQ	0.975	0.499	4	1,3,4,13
J1051.9+0103	162.9660	1.0530	BLLAC	0.408	0.218	6	1,3,6,8,12b,13
J1052.3+0818	163.1022	8.2360	BLLAC	0.200	0.042	6	6,7,8,11,12b,13
J1052.9−3743	163.2421	−37.7218	BLLAC	-	-	-	
J1053.7+4930	163.4339	49.4989	MIS	0.095	0.020	8	5,6,7,8,10,11,12b,13
J1053.9+8628	163.5928	86.4934	UNCL	0.224	0.129	4	3,5,6,11
J1054.2+3926	163.6351	39.4701	FSRQ	0.865	0.353	3	1,3,13
J1054.5+2211	163.6276	22.1819	BLLAC	0.317	0.270	2	3,13
J1055.5−0125	163.8932	−1.4379	BLLAC	0.755	0.591	4	1,3,4,13
J1056.0+0253	164.0275	2.8704	BLLAC	0.188	0.054	7	6,7,8,11,12b,12c,13
J1056.8+7012	164.2234	70.1961	FSRQ	0.657	0.494	3	3,6,13
J1057.2+5510	164.2810	55.1756	BLLAC	0.761	0.740	3	1,3,13
J1057.3−2341	164.3518	−23.7005	FSRQ	1.718	-	1	3
J1057.8−2754	164.4615	−27.9030	BLLAC	0.088	0.047	5	5,6,11,12b,13
J1058.0+4305	164.5122	43.0782	BLLAC	1.102	0.649	4	1,3,6,13
J1058.4+0133	164.6234	1.5663	FSRQ	0.615	0.620	2	3,13
J1058.5+8115	164.5481	81.2424	FSRQ	0.530	0.155	3	3,6,13
J1058.6+2817	164.6246	28.2962	BLLAC	0.255	0.234	2	1,13
J1058.6+5627	164.6572	56.4698	BLLAC	0.308	0.381	4	3,6,7,13
J1058.6−8003	164.6805	−80.0650	BLLAC	-	-	-	
J1059.2−1134	164.8018	−11.5730	BLLAC	0.611	-	1	3
J1059.5+2057	164.9127	20.9561	FSRQ	0.716	0.397	4	1,3,6,13
J1100.3+4020	165.0878	40.3245	BLLAC	0.326	0.278	2	3,13
J1101.4+4108	165.3530	41.1465	BLLAC	1.152	1.293	3	1,3,13
J1101.5+3904	165.3753	39.0757	UNCL	0.941	-	1	13
J1102.1+2249	165.5131	22.6989	UNCL	0.577	0.206	3	6,11,13
J1102.6+5251	165.7077	52.8368	NLS1	0.665	0.173	3	1,3,13
J1102.8−0148	165.7209	−1.8185	UNCL	0.545	0.152	5	1,3,4,6,12c
J1102.9+3014	165.8054	30.2452	FSRQ	0.236	0.129	5	3,6,7,8,13
J1103.0+1157	165.7647	11.9713	FSRQ	0.655	0.403	3	1,3,13
J1103.6−2329	165.9067	−23.4920	BLLAC	0.093	0.009	2	5,6
J1104.0+0020	165.9840	0.3768	BLLAC	0.192	0.042	7	6,7,8,11,12b,12c,13
J1104.0+2611	165.9887	26.1886	BLLAC	0.771	0.312	3	1,3,13
J1104.4+0730	166.1003	7.5148	BLLAC	0.296	0.240	2	3,13
J1104.4+3812	166.1138	38.2088	BLLAC	0.082	0.082	2	11,13
J1104.9+5748	166.0540	57.8702	UNCL	-	-	-	
J1105.8+3944	166.4742	39.7825	BLLAC	0.122	0.009	6	5,6,10,11,12b,13
J1106.0+2813	166.5303	28.2131	FSRQ	0.557	0.325	3	1,3,13
J1106.2−1048	166.5234	−10.8148	UNCL	0.242	0.062	2	6,11
J1106.5−3646	166.6002	−36.7830	BLLAC	0.412	-	1	6

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1107.0−4449	166.7862	−44.8188	FSRQ	-	-	-	
J1107.6+0222	166.8996	2.3735	BLLAC	0.610	0.656	4	1,3,8,13
J1107.7−3042	166.9339	−30.7264	FSRQ	-	-	-	
J1107.8+1501	166.9503	15.0363	BLLAC	0.386	0.178	4	1,4,6,13
J1108.7−1844	167.1905	−18.7515	UNCL	0.694	0.792	2	3,4
J1109.3+2411	167.3174	24.1889	BLLAC	0.460	0.283	3	1,3,13
J1109.6+3735	167.4104	37.6032	BLLAC	0.316	0.113	3	1,3,13
J1109.7−4814	167.3286	−48.2554	UNCL	0.513	-	1	6
J1110.2+7135	167.6567	71.5657	BLLAC	0.579	0.643	2	3,13
J1110.5−1836	167.6157	−18.5980	BLLAC	0.860	-	1	3
J1111.0+3542	167.7368	35.6520	BLLAC	0.549	0.401	3	1,3,13
J1111.4−4624	167.8642	−46.4178	UNCL	-	-	-	
J1111.5+3455	167.8787	34.8676	BLLAC	0.864	0.577	3	1,3,13
J1111.8+4858	167.9954	48.9504	BLLAC	0.577	0.149	5	1,3,4,12b,13
J1112.4+1751	168.1025	17.8561	BLLAC	0.260	0.110	4	1,6,12b,13
J1112.5+3448	168.1615	34.7775	FSRQ	1.125	0.133	3	1,3,13
J1113.6−1920	168.4537	−19.3815	UNCL	0.779	0.423	2	3,6
J1114.5−0819	168.6356	−8.2775	FSRQ	0.814	-	1	13
J1114.7−0248	168.6653	−2.7922	FSRQ	1.688	1.119	3	1,3,13
J1115.2−0703	168.7989	−7.0444	UNCL	0.437	0.169	4	3,4,6,13
J1116.6+2915	169.1442	29.2548	MIS	0.048	0.012	6	5,6,10,11,12b,13
J1117.0+2013	169.2760	20.2354	BLLAC	0.088	0.026	5	6,7,8,12b,13
J1117.2+0008	169.3231	0.1093	BLLAC	0.267	0.107	6	6,7,8,12b,12c,13
J1117.6+0217	169.3484	2.2721	UNCL	0.837	0.249	6	3,4,7,8,12b,13
J1117.6+2550	169.4183	25.8130	BLLAC	0.282	0.121	4	3,6,12b,13
J1117.7−3650	169.4934	−36.8220	UNCL	0.677	0.164	2	4,6
J1118.0+5356	169.4885	53.9319	BLLAC	0.936	1.090	2	3,13
J1118.2−0415	169.5519	−4.2234	UNCL	0.715	0.158	3	3,4,13
J1118.2−4634	169.6123	−46.5708	FSRQ	-	-	-	
J1118.6−1235	169.5714	−12.5484	FSRQ	1.718	-	1	3
J1119.0+1235	169.7388	12.5783	FSRQ	1.566	0.706	3	1,3,13
J1119.6−3047	169.9146	−30.7889	BLLAC	0.233	0.081	2	6,11
J1120.6+0713	170.1770	7.2198	UNCL	-	-	-	-
J1120.8+4212	170.2003	42.2035	BLLAC	0.053	-	1	13
J1121.3−0011	170.3309	−0.2212	MIS	0.078	0.019	8	5,6,7,8,10,11,12b,13
J1121.4−0553	170.3546	−5.8990	FSRQ	0.623	0.443	3	3,6,13
J1123.1−3233	170.8252	−32.5385	BLLAC	0.200	-	1	6
J1123.4−2529	170.8557	−25.4825	FSRQ	0.143	0.021	3	3,5,6
J1123.6+8028	170.9307	80.5065	UNCL	1.329	0.687	3	3,4,13
J1123.8+7230	170.9550	72.5000	BLLAC	0.690	0.353	3	3,4,13
J1124.0+2045	171.0223	20.7649	BLLAC	0.523	0.402	3	1,3,13
J1124.0+2336	171.0113	23.6127	CLAGN	0.863	0.162	3	1,3,13
J1124.4+2308	171.1316	23.1322	BLLAC	0.629	0.166	3	1,3,13
J1124.6−0809	171.1563	−8.1119	UNCL	0.638	0.447	3	3,4,13
J1124.9+2143	171.2652	21.7167	BLLAC	1.002	0.722	4	1,3,4,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1124.9+4934	171.2243	49.5694	BLLAC	0.520	0.411	4	1,3,4,13
J1125.1−2101	171.2859	−21.0183	UNCL	0.461	0.361	3	3,4,6
J1125.5−3557	171.3812	−35.9509	BLLAC	0.127	-	1	6
J1125.9+2005	171.4948	20.0984	AMB	0.090	0.019	7	3,5,6,7,8,11,13
J1125.9−0742	171.4666	−7.7059	BLLAC	0.168	0.042	6	5,6,7,8,12b,13
J1126.8−3829	171.6839	−38.4789	UNCL	0.572	-	1	6
J1127.0−1857	171.7683	−18.9548	FSRQ	1.338	-	1	3
J1127.4+5648	171.9172	56.8374	FSRQ	1.968	0.966	3	1,3,13
J1127.6−4920	171.9191	−49.3234	UNCL	-	-	-	
J1127.8+3618	171.9953	36.3412	FSRQ	0.783	0.250	4	1,3,6,13
J1128.0+5924	172.0556	59.4208	FSRQ	1.337	0.423	3	1,3,13
J1128.8+3757	172.2635	37.9491	BLLAC	0.963	0.570	4	1,3,4,13
J1129.1+3703	172.3096	37.0550	BLLAC	0.633	0.542	3	1,3,13
J1129.2−0529	172.3086	−5.4823	FSRQ	1.313	0.782	4	1,3,4,13
J1129.2−1014	172.3022	−10.2304	UNCL	0.817	0.407	2	3,6
J1129.5+3034	172.4054	30.6096	BLLAC	0.586	0.213	3	1,3,13
J1129.8−1447	172.5294	−14.8243	FSRQ	1.200	-	1	3
J1129.8−4217	172.5293	−42.2447	BLLAC	0.150	0.003	2	5,6
J1130.5−3137	172.6922	−31.6354	BLLAC	0.159	0.004	2	5,6
J1130.5−7801	172.6336	−78.0182	BLLAC	0.167	0.044	2	4,6
J1131.0+3815	172.7220	38.2552	FSRQ	1.082	0.631	3	1,3,13
J1131.1−0944	172.7719	−9.7351	UNCL	0.623	0.431	2	3,4
J1131.4+5809	172.8276	58.1497	BLLAC	0.201	0.055	3	3,6,13
J1131.4−0504	172.8772	−5.0055	MIS	0.764	0.607	5	1,3,6,12b,13
J1132.2−4736	173.0386	−47.6482	BLLAC	0.196	0.005	3	4,5,6
J1132.7+0034	173.1901	0.5744	BLLAC	0.529	0.488	2	3,13
J1133.8−2048	173.4579	−20.8144	BLLAC	0.068	0.014	3	5,6,11
J1134.8−1729	173.6854	−17.4839	BLLAC	-	-	-	
J1135.1+3014	173.8087	30.1682	BLLAC	0.757	0.274	3	1,3,13
J1135.7−0427	173.9926	−4.4744	FSRQ	0.205	0.086	7	3,6,7,8,11,12b,13
J1136.2+3407	174.1139	34.1276	FSRQ	1.336	0.284	3	1,3,13
J1136.3−0501	174.0310	−5.0325	UNCL	0.286	0.044	6	3,7,8,11,12b,13
J1136.4+6736	174.1254	67.6179	BLLAC	0.098	0.024	7	5,6,7,8,11,12b,13
J1136.4+7009	174.1100	70.1576	BLLAC	0.029	0.008	4	5,6,11,13
J1136.8+2550	174.2089	25.8479	SEY	0.114	0.023	7	5,6,7,8,11,12b,13
J1136.8−7413	174.0402	−74.2626	UNCL	0.487	-	1	6
J1137.9−1708	174.4808	−17.1783	BLLAC	-	-	-	
J1138.2+4115	174.5508	41.2311	BLLAC	0.315	0.142	3	1,11,13
J1138.4+4857	174.5087	48.9826	FSRQ	0.878	0.162	4	1,3,12b,13
J1139.0+4033	174.7614	40.5486	FSRQ	1.771	0.869	3	1,3,13
J1139.0+5530	174.7533	55.5097	UNCL	0.628	0.222	3	1,3,13
J1140.5+1528	175.0978	15.4694	BLLAC	0.142	0.055	7	5,6,7,8,11,12b,13
J1141.4+6805	175.3272	68.0750	UNCL	0.599	0.159	5	4,7,8,12b,13
J1141.5−1408	175.4242	−14.1319	BLLAC	0.360	0.162	3	3,4,6
J1142.0+1548	175.5322	15.7984	BLLAC	0.734	0.315	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1143.1+6122	175.8004	61.3697	BLLAC	0.322	0.231	3	3,6,13
J1144.9+1937	176.2709	19.6063	MIS	0.026	0.018	7	5,6,8,10,11,12b,13
J1145.5+4423	176.4105	44.3394	SEY	0.226	0.087	8	3,4,6,7,8,11,12b,13
J1145.5−0340	176.3963	−3.6671	BLLAC	0.160	0.031	7	5,6,7,8,11,12b,13
J1145.6+5552	176.3828	55.8802	UNCL	1.106	-	1	13
J1145.7+0453	176.3388	4.9241	FSRQ	1.011	0.358	3	1,3,13
J1146.4−3327	176.6185	−33.4785	FSRQ	0.229	-	1	6
J1146.6−2902	176.6091	−28.9885	BLLAC	1.061	-	1	3
J1146.9+3958	176.7429	39.9762	FSRQ	0.826	0.419	3	1,3,13
J1147.0−3812	176.7557	−38.2031	BLLAC	-	-	-	
J1147.2−2627	176.7762	−26.4207	UNCL	0.963	-	1	3
J1147.8−0724	176.9648	−7.4114	FSRQ	0.576	0.561	3	3,6,13
J1148.5+2629	176.9990	26.5951	FSRQ	0.621	0.428	3	1,3,13
J1148.6+1841	177.1574	18.6692	BLLAC	0.654	0.201	3	1,3,13
J1149.0+5924	177.2098	59.4157	MIS	0.030	0.035	5	5,6,10,11,13
J1149.1+2819	177.2871	28.4097	UNCL	1.238	0.897	4	1,3,4,13
J1149.2+6246	177.3589	62.7257	BLLAC	0.478	0.225	3	1,3,13
J1149.4+2441	177.3765	24.6575	BLLAC	0.254	0.114	4	1,6,12b,13
J1149.5−4029	177.3238	−40.4967	UNCL	-	-	-	
J1150.4+2418	177.5801	24.2983	BLLAC	0.287	0.245	3	3,4,13
J1150.6+4154	177.6448	41.9111	BLLAC	0.519	0.556	2	3,13
J1150.6−4823	177.9077	−48.3683	UNCL	-	-	-	
J1151.3+0957	177.8221	9.9740	BLLAC	0.609	0.107	3	1,3,13
J1151.5+5859	177.8528	58.9882	BLLAC	0.702	0.803	2	3,13
J1151.5−1347	177.8749	−13.7975	BLLAC	0.636	0.274	2	3,6
J1151.6−2115	177.9180	−21.2285	UNCL	0.700	0.315	3	3,4,6
J1152.1+2837	178.0446	28.6225	BLLAC	0.214	0.067	6	6,7,8,11,12b,13
J1152.3−0839	178.0717	−8.6843	FSRQ	0.902	0.240	2	3,13
J1152.8+3308	178.2163	33.1219	FSRQ	0.740	0.914	2	3,13
J1153.0+8056	178.3021	80.9748	FSRQ	0.706	0.755	2	3,13
J1153.3−1104	178.3430	−11.0868	FSRQ	1.610	-	1	3
J1153.4+4931	178.3519	49.5191	FSRQ	0.283	0.198	4	3,5,6,13
J1153.6−2553	178.4102	−25.9037	UNCL	0.683	0.154	3	3,4,6
J1153.7+3822	178.4288	38.3850	SEY	0.319	0.098	5	1,3,6,12b,13
J1154.0+4037	178.4777	40.6146	NLS1	0.880	0.154	3	1,3,13
J1154.0+6018	178.5189	60.3724	FSRQ	1.015	0.107	3	1,3,13
J1154.0−0010	178.5190	−0.1694	BLLAC	0.201	0.023	3	6,12b,13
J1154.1−3243	178.5257	−32.7119	UNCL	0.437	-	1	6
J1155.5−3418	178.8355	−34.2889	BLLAC	0.329	-	1	6
J1155.8+6137	178.9517	61.5983	BLLAC	0.992	0.926	3	1,3,13
J1156.6+0640	179.2527	6.6868	UNCL	1.156	0.271	4	1,3,4,13
J1156.6−2248	179.1385	−22.8346	UNCL	0.890	0.777	2	3,6
J1158.5+4824	179.6115	48.4212	FSRQ	0.919	0.498	3	1,3,13
J1158.9+0818	179.7217	8.3287	AMB	0.183	0.043	5	6,7,8,12b,13
J1159.0+0939	179.7266	9.6199	BLLAC	0.873	0.668	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1159.2−2227	179.7969	−22.4769	FSRQ	0.770	-	1	3
J1159.3−2142	179.8393	−21.7125	FSRQ	1.105	-	1	3
J1159.5+2914	179.8826	29.2455	FSRQ	0.409	0.202	3	1,3,13
J1159.5−0723	179.8828	−7.3999	UNCL	0.368	0.218	3	3,6,13
J1200.2+0201	180.0515	2.0357	UNCL	0.635	0.451	5	6,7,8,12c,13
J1200.6+1229	180.1668	12.5176	BLLAC	0.656	0.164	3	1,3,13
J1200.7+2008	180.2380	20.1457	UNCL	0.430	0.308	3	11,12b,13
J1200.8−1429	180.2297	−14.5112	UNCL	0.698	0.277	3	3,4,6
J1201.1−0332	180.2964	−3.5388	AMB	0.683	0.095	4	1,3,12b,13
J1201.7+1429	180.4345	14.5268	BLLAC	0.601	0.194	3	1,3,13
J1202.4+4442	180.5361	44.7396	BLLAC	0.207	0.053	6	3,6,7,8,12b,13
J1202.5+3852	180.7378	38.8632	BLLAC	0.771	0.543	3	1,3,13
J1202.5−0528	180.6426	−5.4674	NLS1	0.290	0.252	2	3,13
J1202.9+5141	180.7796	51.6752	MIS	0.064	0.014	8	5,6,7,8,10,11,12b,13
J1203.1+6031	180.7646	60.5220	SEY	0.079	0.087	6	3,5,6,11,12b,13
J1203.3+1119	180.8041	11.3048	FSRQ	0.953	0.182	4	1,3,4,13
J1203.4−3925	180.8245	−39.4392	BLLAC	0.185	-	1	6
J1204.0+1146	181.0505	11.7654	BLLAC	0.165	0.104	4	7,8,12b,13
J1204.2−0709	181.0694	−7.1692	BLLAC	0.087	0.030	4	5,6,11,13
J1204.8+0407	181.2153	4.1372	FSRQ	0.755	0.239	5	1,3,6,12c,13
J1205.7−2635	181.3884	−26.5679	FSRQ	0.718	-	1	3
J1205.8+3321	181.4284	33.3631	FSRQ	0.427	0.329	2	6,13
J1207.2−0524	181.8437	−5.4117	UNCL	-	-	-	
J1207.7−0106	181.9237	−1.1102	FSRQ	0.772	0.543	3	1,3,13
J1207.7−2229	181.9044	−22.5099	BLLAC	0.760	0.649	2	3,6
J1208.1+3017	182.0180	30.2640	BLLAC	0.618	0.330	3	3,4,13
J1208.2−7810	182.0765	−78.1635	UNCL	-	-	-	
J1208.4+6121	182.1547	61.3518	MIS	0.209	0.065	7	3,6,7,8,11,12b,13
J1208.9+5441	182.2261	54.6995	NLS1	0.986	0.235	3	1,3,13
J1209.0−4630	182.2716	−46.4968	UNCL	-	-	-	
J1209.4+4118	182.3449	41.3282	BLLAC	0.505	0.542	2	3,13
J1209.4+7608	182.3762	76.1533	UNCL	0.486	0.307	4	3,4,6,13
J1209.7+2548	182.4379	25.7844	FSRQ	1.150	0.365	3	1,3,13
J1209.8+1810	182.4657	18.1686	FSRQ	0.709	0.147	3	1,3,13
J1211.0−3800	182.7573	−37.9219	UNCL	-	-	-	
J1211.6+3901	182.8927	39.0149	BLLAC	0.668	0.100	4	7,8,12b,13
J1211.6−2735	182.8992	−27.6044	UNCL	0.760	0.081	2	3,4
J1212.0+2242	182.9945	22.7090	BLLAC	0.310	0.095	3	1,12b,13
J1212.0−2326	183.0189	−23.4617	BLLAC	0.666	0.045	2	3,4
J1212.7−1402	183.1695	−14.0288	UNCL	0.244	-	1	6
J1213.0+5129	183.2534	51.4932	BLLAC	0.555	0.434	3	1,3,13
J1213.3−2618	183.3464	−26.3022	BLLAC	0.170	-	1	6
J1213.6+1306	183.3840	13.1225	FSRQ	0.802	0.499	3	1,3,13
J1213.7+6423	183.4534	64.4222	BLLAC	0.734	0.221	3	1,3,13
J1213.8−4345	183.4600	−43.7235	UNCL	-	-	-	

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1214.6−1926	183.5154	−19.3619	NLS1	0.132	-	1	5
J1215.0+1656	183.7666	16.9105	FSRQ	0.739	0.670	2	3,13
J1215.1+0731	183.7957	7.5346	BLLAC	0.081	0.016	4	10,11,12b,13
J1215.1+3513	183.7869	35.1371	BLLAC	0.504	0.156	5	6,7,8,12b,13
J1215.1+5002	183.7533	50.0376	BLLAC	0.622	0.719	2	3,13
J1215.8−1733	183.9448	−17.5293	UNCL	-	-	-	
J1215.8−3732	184.0084	−37.5703	UNCL	-	-	-	
J1216.1+0930	184.0259	9.4860	SEY	0.075	0.014	5	5,6,10,12b,13
J1216.1−0242	184.0136	−2.7183	BLLAC	0.219	0.064	2	6,13
J1217.9+3007	184.4670	30.1168	BLLAC	0.115	0.078	3	3,6,13
J1218.0−0028	184.4947	−0.4962	BLLAC	0.436	0.176	4	3,6,8,13
J1218.5−0119	184.6455	−1.3318	BLLAC	0.498	0.635	2	3,13
J1219.0+4827	184.7767	48.4989	FSRQ	0.802	0.307	4	1,3,6,13
J1219.0−4827	184.7594	−48.4411	BLLAC	0.200	-	1	4
J1219.6+0550	184.8467	5.8249	MIS	0.009	0.003	4	5,6,12b,13
J1219.7+0444	184.9374	4.7729	BLLAC	0.138	-	1	13
J1219.7−0313	184.9405	−3.2400	BLLAC	0.282	0.263	3	3,8,13
J1219.9+6056	184.9109	60.9656	UNCL	0.851	0.024	3	11,12b,13
J1220.1+3432	185.0346	34.5227	BLLAC	0.489	0.513	2	3,13
J1220.1+7105	185.0151	71.0920	AMB	0.649	0.804	2	3,13
J1220.2−3713	185.0825	−37.2373	UNCL	0.300	-	1	4
J1221.3+3010	185.3414	30.1770	BLLAC	0.203	0.184	4	3,5,6,13
J1221.5+2814	185.3820	28.2329	BLLAC	0.229	0.220	3	3,6,13
J1222.0−4121	185.5423	−41.3826	UNCL	-	-	-	
J1222.5+0414	185.5940	4.2210	FSRQ	0.388	0.462	2	3,13
J1223.0+1100	185.7802	11.0106	BLLAC	1.148	0.783	3	1,3,13
J1223.3+1213	185.8683	12.1257	UNCL	0.998	0.173	3	11,12b,13
J1223.6−3032	185.9042	−30.5473	BLLAC	0.201	0.082	3	4,6,11
J1223.8+4649	185.9712	46.8467	BLLAC	0.228	0.030	6	6,7,8,11,12b,13
J1223.8+8039	185.9187	80.6679	BLLAC	0.469	0.368	3	3,6,13
J1223.9+5000	186.0413	50.0321	FSRQ	0.487	0.508	3	3,6,13
J1223.9+7954	185.9920	79.8912	BLLAC	0.208	0.060	4	6,11,12b,13
J1224.1+2239	186.0043	22.6610	BLLAC	0.479	0.151	4	1,3,6,13
J1224.4+2436	186.1008	24.6065	BLLAC	0.839	0.940	2	3,13
J1224.7−8313	186.2266	−83.2195	UNCL	-	-	-	
J1224.9+2122	186.2269	21.3796	FSRQ	0.444	0.544	2	3,13
J1224.9+4334	186.2146	43.5887	AMB	0.772	0.283	3	1,3,13
J1225.0+0330	186.2184	3.5140	FSRQ	0.655	0.393	3	1,3,13
J1225.3−3446	186.4034	−34.7894	BLLAC	0.260	0.053	2	4,6
J1225.4−1550	186.3554	−15.8881	UNCL	0.272	0.038	2	4,6
J1225.5−2851	186.3146	−28.8315	UNCL	1.723	-	1	3
J1225.6−7313	186.3970	−73.2277	UNCL	0.294	-	1	6
J1226.7+0637	186.6843	6.6481	BLLAC	0.163	-	1	13
J1226.8−1329	186.7267	−13.4775	BLLAC	1.301	-	1	3
J1227.1−4437	186.8612	−44.6107	BLLAC	-	-	-	

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1228.7+4858	187.2157	48.9670	FSRQ	1.178	0.621	3	1,3,13
J1229.0+0202	187.2779	2.0524	FSRQ	0.054	0.021	4	5,6,11,13
J1230.2+2517	187.5587	25.3020	BLLAC	0.555	0.672	2	3,13
J1230.8+1223	187.7059	12.3911	MIS	0.040	0.058	4	5,6,12b,13
J1230.9+3711	187.8504	37.1839	MIS	0.204	0.030	6	6,7,8,11,12b,13
J1231.5+1421	187.8496	14.3568	BLLAC	0.109	0.024	4	5,6,11,13
J1231.6+6415	187.8808	64.2384	BLLAC	0.114	0.025	6	5,6,10,11,12b,13
J1231.7+2847	187.9316	28.7972	BLLAC	0.344	0.308	3	3,6,13
J1232.5+4821	188.1449	48.3592	FSRQ	0.593	0.384	4	3,7,8,13
J1232.5−3720	188.1500	−37.3476	UNCL	-	-	-	
J1233.1+1703	188.2714	17.0259	BLLAC	0.719	0.818	2	3,13
J1233.6+5027	188.4553	50.4397	AMB	0.154	0.042	7	3,6,7,8,11,12b,13
J1233.7−0144	188.4222	−1.7399	BLLAC	0.581	0.424	3	1,3,13
J1234.7−0434	188.6842	−4.6062	UNCL	0.629	0.059	2	3,13
J1236.3+3858	189.0959	39.0003	BLLAC	0.208	0.062	5	6,7,8,12b,13
J1237.0+3019	189.2733	30.3348	BLLAC	0.770	0.407	4	1,3,4,13
J1237.8+6256	189.4128	62.9786	BLLAC	0.188	0.049	5	6,7,8,12b,13
J1238.1−4541	189.5251	−45.6916	BLLAC	0.362	0.185	2	4,6
J1238.3−1959	189.6016	−19.9871	BLLAC	0.704	0.665	2	3,6
J1238.5−1201	189.5309	−11.9902	FSRQ	0.224	-	1	3
J1239.4+0728	189.8525	7.5048	BLLAC	0.552	0.604	2	3,13
J1239.5+0443	189.8865	4.7181	FSRQ	0.705	0.097	3	1,3,13
J1240.4−2606	190.1209	−26.1553	UNCL	1.184	-	1	3
J1241.3+4236	190.3751	42.6606	BLLAC	0.556	0.175	5	3,7,8,12b,13
J1241.5+3439	190.4217	34.6756	BLLAC	0.266	-	1	6
J1241.8−1456	190.4557	−14.9329	BLLAC	0.134	-	1	6
J1241.9+0636	190.4512	6.6003	BLLAC	1.566	0.744	3	1,3,13
J1242.6+7635	190.6346	76.5716	UNCL	0.485	0.020	2	4,13
J1242.9+7315	190.7967	73.2665	BLLAC	0.062	0.007	5	5,6,11,12b,13
J1243.0+3950	190.8288	39.8549	AMB	1.061	0.282	3	1,3,13
J1243.2+3627	190.8031	36.4622	BLLAC	0.036	-	1	13
J1243.9−0218	190.9687	−2.3107	BLLAC	0.788	0.041	4	11,12b,12c,13
J1244.2−4956	191.0957	−49.9062	UNCL	0.301	0.141	3	4,5,6
J1244.5+1616	191.1848	16.2727	BLLAC	0.359	0.052	6	6,7,8,11,12b,13
J1245.1+5709	191.2917	57.1651	BLLAC	0.542	0.588	2	3,13
J1245.8+0232	191.3908	2.4737	BLLAC	0.710	0.333	3	1,3,13
J1246.3+0112	191.5106	1.2219	BLLAC	0.552	0.657	8	1,3,6,8,11,12b,12c,13
J1246.7−2548	191.6950	−25.7970	NLS1	0.387	0.221	2	3,6
J1247.0+4421	191.7530	44.3888	BLLAC	0.272	0.240	2	1,13
J1248.3+5820	192.0783	58.3413	BLLAC	0.508	0.631	2	3,13
J1248.7+5127	192.1429	51.4689	BLLAC	0.275	0.111	3	3,12b,13
J1248.9+4840	192.2123	48.6648	FSRQ	1.421	0.472	3	1,3,13
J1249.2−2809	192.3305	−28.1429	UNCL	0.103	0.058	4	4,5,6,11
J1249.3−0545	192.3307	−5.7610	UNCL	0.223	0.033	6	6,7,8,11,12b,13
J1249.8+3707	192.4448	37.1300	BLLAC	0.883	0.555	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1250.6+0217	192.6358	2.2756	BLLAC	0.731	0.282	3	1,3,13
J1250.8+3117	192.7160	31.2850	UNCL	0.304	0.057	7	4,6,7,8,11,12b,13
J1251.2+1039	192.8245	10.6520	BLLAC	0.241	0.108	6	3,6,7,8,12b,13
J1251.3−0201	192.8266	−2.0354	UNCL	0.414	0.360	3	3,4,13
J1251.3−1719	192.8103	−17.2870	FSRQ	0.727	0.304	2	3,6
J1253.2+5301	193.2997	53.0199	BLLAC	0.721	0.908	2	3,13
J1253.5−3934	193.4212	−39.5331	BLLAC	0.163	0.018	2	5,6
J1253.8+0327	193.4459	3.4418	BLLAC	0.040	0.006	8	5,6,7,8,10,11,12b,13
J1253.8+6242	193.4971	62.7160	BLLAC	0.515	0.418	3	1,3,13
J1254.2−2205	193.5936	−22.0705	UNCL	0.700	-	1	4
J1254.5+2210	193.6386	22.1843	BLLAC	0.525	0.526	3	3,6,13
J1254.9+1138	193.6594	11.6850	FSRQ	0.492	0.598	2	3,13
J1254.9−4426	193.7396	−44.4157	BLLAC	0.028	0.007	2	5,6
J1256.1−0547	194.0465	−5.7893	FSRQ	0.026	-	1	13
J1256.2−1146	194.0665	−11.7770	BLLAC	0.035	0.005	3	5,6,11
J1257.2+3646	194.3191	36.7875	BLLAC	0.403	0.310	3	3,6,13
J1257.6+2413	194.3830	24.2111	BLLAC	0.133	0.036	7	5,6,7,8,11,12b,13
J1257.8+3228	194.4885	32.4915	FSRQ	0.636	0.417	3	1,3,13
J1258.3+6121	194.5866	61.3460	BLLAC	0.204	0.046	5	6,7,8,12b,13
J1258.6−1759	194.6596	−18.0009	FSRQ	0.852	0.402	2	3,6
J1258.7+5143	194.6058	51.7073	UNCL	0.441	0.174	7	3,4,6,7,8,12b,13
J1258.7−0452	194.7002	−4.7959	BLLAC	0.113	-	1	13
J1258.8−2219	194.7270	−22.3253	FSRQ	1.205	0.041	2	1,3
J1259.1−2311	194.7853	−23.1774	FSRQ	0.382	0.319	2	3,6
J1259.5+2332	194.9012	23.5131	UNCL	0.237	0.069	8	3,4,6,7,8,11,12b,13
J1259.7−3223	194.9576	−32.3914	BLLAC	-	-	-	
J1259.8−3749	194.9575	−37.8162	BLLAC	0.224	0.031	2	4,6
J1300.0+1753	195.0355	17.9271	BLLAC	0.835	0.605	4	1,3,4,13
J1300.4+1416	195.0872	14.2885	FSRQ	0.782	0.526	3	1,3,13
J1301.5+4413	195.4430	44.2720	BLLAC	0.520	0.316	3	1,3,13
J1301.6+3336	195.3715	33.6168	FSRQ	0.954	0.373	3	1,3,13
J1301.6+4056	195.4402	40.9402	BLLAC	0.572	0.479	3	1,3,13
J1302.3+6901	195.6580	69.0477	AMB	0.571	0.144	4	3,6,12b,13
J1302.7+4750	195.7029	47.9196	BLLAC	0.124	0.014	8	5,6,7,8,10,11,12b,13
J1302.8+5748	195.7186	57.8104	CLAGN	1.320	0.574	3	1,3,13
J1303.0+2434	195.7634	24.5655	BLLAC	0.806	0.701	4	1,3,11,13
J1303.6−4622	195.9178	−46.3507	FSRQ	-	-	-	
J1304.0+3704	196.0305	37.1523	BLLAC	0.392	0.184	3	1,3,13
J1304.2−2412	196.0696	−24.2047	UNCL	1.264	-	1	3
J1304.3−4353	196.0875	−43.8862	BLLAC	-	-	-	
J1304.6−0348	196.1818	−3.7674	FSRQ	1.034	0.350	2	3,13
J1304.9−2107	196.2461	−21.1118	UNCL	0.938	-	1	3
J1305.3+5118	196.3448	51.2778	NLS1	0.576	0.409	2	3,13
J1305.6+7853	196.2501	78.9099	UNCL	0.610	0.136	3	3,6,13
J1305.9+3858	196.3800	38.9225	MIS	0.282	0.051	6	6,7,8,11,12b,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1306.3+1113	196.5802	11.2277	MIS	0.079	0.016	8	5,6,7,8,10,11,12b,13
J1306.7−2148	196.6752	−21.7975	MIS	0.142	0.053	6	3,5,6,7,8,11
J1307.6−4259	196.9083	−42.9942	BLLAC	-	-	-	
J1308.5+3547	197.0988	35.7770	FSRQ	0.997	0.533	4	1,3,6,13
J1309.4+4305	197.3564	43.0849	BLLAC	0.683	0.757	2	3,13
J1309.7+1153	197.3914	11.9068	BLLAC	0.659	0.220	3	1,3,13
J1310.2−1158	197.5519	−11.9630	BLLAC	0.083	0.015	3	5,6,11
J1310.5+3221	197.6194	32.3455	FSRQ	0.881	0.296	2	3,13
J1310.6+2449	197.6605	24.8062	BLLAC	0.207	0.034	6	6,7,8,11,12b,13
J1310.9+5514	197.7634	55.2318	NLS1	0.530	0.324	3	1,3,13
J1311.0+0034	197.7770	0.5861	BLLAC	0.384	0.401	4	3,6,8,13
J1311.0+3233	197.7475	32.5596	FSRQ	1.264	0.523	3	1,3,13
J1311.8+2057	197.9310	20.8690	MIS	0.724	0.224	4	1,3,4,13
J1311.8+3954	197.9421	39.8881	BLLAC	0.550	0.164	3	1,3,13
J1312.4−2156	198.1315	−21.9398	BLLAC	0.375	0.281	2	3,6
J1312.6+4828	198.1806	48.4753	AMB	0.522	0.111	6	6,7,8,11,12b,13
J1312.6−1900	198.1446	−18.9837	UNCL	0.391	0.145	2	4,6
J1312.8−0425	198.2121	−4.4139	FSRQ	0.724	-	1	13
J1312.8−2350	198.2032	−23.8464	BLLAC	1.261	-	1	3
J1314.7+2348	198.6825	23.8074	BLLAC	0.485	0.432	2	3,13
J1315.0−4236	198.7642	−42.6139	BLLAC	0.112	0.003	2	5,6
J1315.4+8453	200.2216	84.8364	UNCL	0.573	-	1	11
J1315.5+1135	198.8859	11.5588	BLLAC	0.406	0.022	3	1,4,13
J1315.9−0732	198.9707	−7.5506	BLLAC	0.200	0.093	2	6,13
J1316.1−3338	199.0333	−33.6498	FSRQ	-	-	-	
J1316.5+3013	199.2274	30.2484	BLLAC	0.586	0.304	3	1,3,13
J1317.1+6613	199.4716	66.2654	UNCL	0.920	0.522	2	3,13
J1317.6+3428	199.4021	34.4211	FSRQ	0.690	0.439	3	1,3,13
J1317.6+7450	199.5955	74.8098	UNCL	0.895	0.728	3	3,4,13
J1318.1−1740	199.5339	−17.5935	UNCL	0.622	0.296	2	3,4
J1318.2+6754	199.6679	67.9067	UNCL	0.977	0.401	4	1,3,4,13
J1318.7−1234	199.6786	−12.5844	UNCL	1.178	-	1	3
J1319.5+1404	199.8823	14.0925	BLLAC	0.394	0.288	3	3,6,13
J1319.5−0045	199.9115	−0.8278	MIS	1.088	1.403	2	3,13
J1319.8+7759	199.8386	77.9729	UNCL	0.156	0.047	3	4,6,13
J1321.1+2216	200.2967	22.2700	NLS1	0.883	0.267	3	1,3,13
J1321.3−2641	200.3085	−26.6029	FSRQ	1.065	-	1	3
J1321.9+3219	200.5004	32.3175	BLLAC	0.381	0.027	7	6,7,8,10,11,12b,13
J1322.0+8317	200.4400	83.2704	UNCL	0.934	0.283	4	3,11,12b,13
J1322.2+0842	200.5424	8.7091	CLAGN	0.353	0.048	6	3,6,7,8,12b,13
J1322.3−0606	200.5837	−6.1049	UNCL	0.677	0.466	3	3,4,13
J1322.6−0936	200.6538	−9.6272	FSRQ	1.004	0.884	2	3,13
J1322.6−1418	200.6274	−14.3151	UNCL	0.659	0.093	3	3,4,6
J1322.6−1617	200.6819	−16.2902	UNCL	0.525	0.350	3	3,4,6
J1322.9+0437	200.7542	4.6643	BLLAC	0.140	0.046	7	5,6,7,8,10,11,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1323.0+2941	200.7536	29.6958	FSRQ	0.739	0.244	3	1,3,13
J1323.9+1405	200.9932	14.0999	BLLAC	0.293	0.231	2	1,13
J1324.9+4748	201.1223	47.7224	FSRQ	0.530	0.439	4	3,7,8,13
J1325.5−4300	201.3651	−43.0191	MIS	-	-	-	
J1325.6−0227	201.4246	−2.4694	BLLAC	0.459	0.190	5	1,3,6,8,13
J1326.1+1232	201.5738	12.4997	BLLAC	0.161	0.037	7	5,6,7,8,11,12b,13
J1326.7−0503	201.7276	−5.0164	FSRQ	1.219	0.742	2	3,13
J1326.9+2210	201.7536	22.1806	FSRQ	0.986	0.291	3	1,3,13
J1327.8+2522	201.9956	25.4629	BLLAC	1.014	0.629	3	1,3,13
J1328.5−4727	202.1693	−47.4637	BLLAC	0.236	-	1	6
J1328.6+1145	202.1398	11.7557	BLLAC	0.338	0.091	3	1,12b,13
J1329.4−0530	202.3692	−5.5267	FSRQ	0.360	0.453	2	3,13
J1330.2+7002	202.6075	70.0274	BLLAC	0.343	0.314	3	3,4,13
J1330.3+4441	202.5897	44.6890	BLLAC	0.439	0.002	2	1,13
J1330.4+3157	202.4703	31.9031	BLLAC	0.731	0.345	3	1,3,13
J1330.7+5200	202.6775	52.0376	AMB	0.668	0.089	5	7,8,11,12b,13
J1331.0+3032	202.7845	30.5092	MIS	0.520	0.546	2	3,13
J1331.0+5653	202.7621	56.9283	BLLAC	0.236	0.034	6	6,7,8,11,12b,13
J1331.2−1325	202.8348	−13.4349	FSRQ	0.537	0.201	2	3,6
J1331.6+1711	202.8894	17.2141	BLLAC	0.631	0.308	3	1,3,13
J1331.7−0343	202.8715	−3.6873	FSRQ	1.034	0.685	2	3,13
J1331.7−0647	202.9453	−6.7759	BLLAC	0.382	0.451	5	3,4,6,11,13
J1332.0−0509	203.0186	−5.1620	FSRQ	0.494	0.390	3	3,6,13
J1332.2+4722	203.1885	47.3730	FSRQ	0.522	0.595	2	3,13
J1332.6−1256	203.1635	−12.9376	FSRQ	1.047	-	1	3
J1333.2+2725	203.2812	27.4218	CLAGN	0.851	0.189	4	1,3,6,13
J1333.7+5056	203.4741	50.9600	FSRQ	1.144	1.323	2	1,13
J1334.1−3521	203.5501	−35.3372	UNCL	-	-	-	
J1334.5+5634	203.6562	56.5300	MIS	0.465	0.282	4	1,3,12b,13
J1335.3−2949	203.8740	−29.8441	BLLAC	1.649	-	1	3
J1336.2+2320	204.0507	23.3328	BLLAC	0.206	0.050	5	6,7,8,12b,13
J1337.4+5502	204.4568	55.0173	FSRQ	0.842	0.445	4	1,3,4,13
J1337.5−7802	204.5335	−78.0168	UNCL	-	-	-	
J1337.6−1257	204.4158	−12.9569	FSRQ	0.718	-	1	3
J1337.9−1956	204.4472	−19.9699	UNCL	0.482	0.110	2	4,6
J1338.0+6534	204.3169	65.5462	FSRQ	0.759	0.164	3	1,3,13
J1338.9+1153	204.7461	11.8880	BLLAC	0.771	0.858	2	3,13
J1339.0−2400	204.7573	−24.0206	FSRQ	0.723	0.542	2	3,11
J1339.1−2620	204.8329	−26.3418	FSRQ	0.968	-	1	3
J1339.9−0138	205.0192	−1.6296	FSRQ	1.093	0.869	4	1,3,6,13
J1340.1+3857	204.7070	38.8531	MIS	-	-	-	
J1340.4+6926	205.2000	69.3896	FSRQ	1.460	0.942	2	3,13
J1340.5+4409	205.1242	44.1678	BLLAC	0.237	0.129	5	6,7,8,12b,13
J1340.8−0409	205.1751	−4.1686	BLLAC	0.179	0.100	4	3,6,11,13
J1341.1+7433	205.3273	74.5819	UNCL	0.761	0.322	3	3,6,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1341.2+3958	205.2713	39.9959	AMB	0.124	0.042	7	5,6,7,8,11,12b,13
J1341.6+5515	205.4008	55.2436	BLLAC	0.188	0.046	7	3,6,7,8,11,12b,13
J1341.7−3907	205.4749	−39.1166	UNCL	0.243	0.017	2	5,6
J1341.8−2053	205.5197	−20.8582	FSRQ	0.853	0.879	2	3,6
J1342.6+0944	205.6668	9.7979	BLLAC	0.272	0.020	6	3,6,7,8,12b,13
J1342.7+0505	205.6818	5.0756	MIS	0.100	0.020	8	5,6,7,8,10,11,12b,13
J1343.6+5755	205.9901	57.9118	FSRQ	0.698	0.469	3	1,3,13
J1344.0+6605	206.0362	66.1032	FSRQ	1.122	0.092	3	1,3,13
J1344.1−7700	205.9653	−76.9695	UNCL	-	-	-	
J1344.2−1723	206.0600	−17.3946	FSRQ	0.620	-	1	6
J1344.4−3656	206.0991	−36.9413	UNCL	-	-	-	
J1345.5+4453	206.3882	44.8832	FSRQ	0.763	0.325	5	1,3,6,11,13
J1345.6−3356	206.4294	−33.9454	UNCL	-	-	-	
J1345.8+0706	206.4555	7.1086	FSRQ	1.117	0.330	3	1,3,13
J1347.1−2959	206.7787	−29.9785	BLLAC	-	-	-	
J1347.4+7309	206.8943	73.3036	UNCL	1.133	0.247	3	3,4,13
J1347.6−3751	206.9185	−37.8435	FSRQ	1.300	-	1	4
J1348.9+0756	207.2225	7.9466	BLLAC	0.172	0.029	8	5,6,7,8,10,11,12b,13
J1349.5−1131	207.3810	−11.5483	FSRQ	0.507	0.402	2	3,6
J1350.8+3033	207.7197	30.5816	FSRQ	0.796	0.304	2	3,13
J1351.0+0029	207.7685	0.5221	FSRQ	0.652	0.367	2	11,13
J1351.3+1115	207.8369	11.2481	BLLAC	0.456	0.444	4	1,4,6,13
J1351.4−1529	207.8228	−15.5044	BLLAC	0.213	-	1	6
J1351.7+5542	207.9925	55.7030	BLLAC	1.163	1.012	2	1,13
J1351.7−2912	207.9452	−29.2049	BLLAC	-	-	-	
J1352.7−2742	208.1169	−27.7520	UNCL	1.303	0.538	2	3,4
J1353.0−4413	208.2356	−44.2112	BLLAC	-	-	-	
J1353.2+3740	208.3087	37.6872	BLLAC	0.152	0.041	7	5,6,7,8,11,12b,13
J1353.3+1434	208.3452	14.5942	BLLAC	0.752	0.338	3	1,3,13
J1353.4+5600	208.3669	56.0158	BLLAC	0.296	0.108	5	1,3,6,12b,13
J1353.7−3936	208.4381	−39.6197	BLLAC	0.358	0.056	2	4,6
J1354.2+6934	208.5129	69.5303	UNCL	1.034	0.122	3	3,12b,13
J1354.3−0206	208.5287	−2.1009	FSRQ	2.260	1.450	3	1,3,13
J1354.4+3707	208.6112	37.1152	BLLAC	0.492	0.451	3	3,6,13
J1354.7+0623	208.6842	6.3800	BLLAC	0.231	0.042	7	3,6,7,8,11,12b,13
J1354.8−1041	208.6938	−10.6841	FSRQ	1.224	-	1	3
J1356.2−1726	209.0290	−17.4088	MIS	0.056	0.001	3	5,6,11
J1357.1+1921	209.2685	19.3187	FSRQ	0.464	0.581	2	3,13
J1357.5+0127	209.4112	1.4705	BLLAC	0.246	0.197	3	3,8,13
J1358.1+7642	209.4807	76.7225	FSRQ	1.044	0.146	3	3,12b,13
J1358.9−0703	209.7108	−7.0671	UNCL	0.855	0.650	5	1,3,4,6,13
J1359.1+5544	209.7739	55.7415	FSRQ	0.633	0.465	3	1,3,13
J1359.4+0202	209.8631	1.9985	FSRQ	0.887	0.602	3	1,3,13
J1359.7+4012	209.9087	40.1940	FSRQ	0.242	0.082	6	3,6,7,8,12b,13
J1359.8−3746	209.9572	−37.7669	BLLAC	-	-	-	

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1400.2−4010	210.0920	−40.1399	BLLAC	0.194	-	1	6
J1401.1−3717	210.3084	−37.2996	UNCL	-	-	-	
J1401.2−0915	210.2722	−9.2754	FSRQ	0.973	0.399	2	1,3
J1402.5−1827	210.6906	−18.4323	UNCL	1.004	0.775	3	3,4,6
J1402.6+1600	210.6855	15.9991	AMB	0.198	0.094	6	3,5,6,11,12b,13
J1402.6−3330	210.6725	−33.5692	FSRQ	-	-	-	
J1404.8+0402	211.2121	4.0339	BLLAC	0.920	1.189	2	3,13
J1404.8+6554	211.2065	65.9088	BLLAC	0.189	0.061	5	6,7,8,12b,13
J1406.1−2508	211.5400	−25.1359	BLLAC	0.640	0.662	2	3,6
J1406.4−1654	211.6592	−16.8314	UNCL	0.420	0.187	3	3,4,6
J1406.6−3934	211.6254	−39.5858	BLLAC	-	-	-	
J1406.9+1643	211.7467	16.7017	BLLAC	0.339	0.286	2	3,13
J1407.5−2706	211.8149	−27.1582	BLLAC	0.047	0.026	3	5,6,11
J1407.6−4301	211.9155	−43.0422	BLLAC	-	-	-	
J1408.9−0751	212.2353	−7.8741	FSRQ	0.667	0.341	2	3,13
J1410.1+0202	212.5194	2.0519	BLLAC	1.240	1.040	2	3,13
J1410.3+1438	212.6169	14.6445	BLLAC	0.105	0.019	7	5,6,7,8,10,11,13
J1410.3+6058	212.6285	61.0036	BLLAC	0.239	0.053	5	6,7,8,12b,13
J1410.4+2820	212.6232	28.3488	BLLAC	0.482	0.430	3	3,6,13
J1410.5+6215	212.6476	62.2798	UNCL	0.582	0.364	5	7,8,11,12b,13
J1411.5−0723	212.8889	−7.3815	BLLAC	0.283	0.046	5	4,6,11,12b,13
J1411.8+5249	212.9560	52.8167	MIS	0.058	0.014	8	5,6,7,8,10,11,12b,13
J1412.0+3836	213.0342	38.5892	BLLAC	0.949	0.579	4	1,3,4,13
J1412.1+7427	212.8944	74.4083	BLLAC	0.542	0.631	2	3,13
J1412.9+5018	213.2595	50.3242	FSRQ	1.033	0.131	3	1,3,13
J1415.5+4830	213.9033	48.5085	BLLAC	0.468	0.304	3	1,3,13
J1415.9−1002	213.8368	−9.9329	FSRQ	0.826	-	1	3
J1416.1+1320	213.9951	13.3399	AMB	0.334	0.030	6	6,7,8,11,12b,13
J1416.1−2417	214.0507	−24.3038	BLLAC	0.095	0.013	3	5,6,11
J1417.9+2543	214.4861	25.7240	BLLAC	0.128	0.058	6	5,6,7,8,11,13
J1417.9+4613	214.2840	46.1182	FSRQ	0.855	1.044	2	3,13
J1418.4+3543	214.6191	35.7137	FSRQ	0.485	0.268	5	1,3,4,6,13
J1418.4−0233	214.6097	−2.5595	BLLAC	0.075	-	1	13
J1418.7−3504	214.7455	−35.1618	FSRQ	0.244	-	1	6
J1418.9+7731	214.7515	77.5415	BLLAC	1.216	1.543	2	3,13
J1419.3+0444	214.8645	4.7538	AMB	0.809	0.908	4	1,3,8,13
J1419.4−0838	214.8440	−8.6423	FSRQ	0.713	0.371	3	3,6,13
J1419.5+3821	214.9442	38.3635	FSRQ	1.082	0.293	3	1,3,13
J1419.8+5423	214.9442	54.3874	BLLAC	0.253	0.225	3	3,6,13
J1420.3+0612	215.0570	6.2413	BLLAC	0.974	1.155	2	1,13
J1420.9−7920	215.3499	−79.3407	UNCL	-	-	-	
J1421.1+3859	215.2751	38.9230	FSRQ	0.347	0.154	4	1,3,6,13
J1421.1−1120	215.2506	−11.3057	UNCL	1.168	-	1	3
J1421.1−4614	215.1977	−46.2415	UNCL	-	-	-	
J1421.6−4819	215.4110	−48.3397	FSRQ	0.538	-	1	6

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1422.3+3223	215.6266	32.3862	CLAGN	0.515	0.263	4	1,3,6,13
J1422.6+5801	215.6620	58.0321	BLLAC	0.445	0.001	2	1,13
J1423.1+3738	215.7692	37.6252	BLLAC	0.454	0.306	3	1,3,13
J1423.5+4524	215.8697	45.3955	BLLAC	0.749	0.137	5	7,8,11,12b,13
J1423.5−7829	215.9315	−78.4930	FSRQ	0.717	-	1	6
J1424.1+2917	216.0347	29.3001	BLLAC	0.368	0.148	6	1,3,6,11,12b,13
J1424.1−1750	216.0515	−17.8357	BLLAC	0.056	0.002	3	5,6,11
J1424.2+0433	216.0396	4.5811	BLLAC	0.452	0.466	2	3,13
J1424.6+1447	216.1512	14.8196	BLLAC	0.557	0.481	3	1,3,13
J1425.0+3615	216.2313	36.2600	BLLAC	0.470	0.390	2	3,13
J1425.4−0119	216.3590	−1.3072	BLLAC	0.511	0.127	4	1,3,4,13
J1426.1+3403	216.5322	34.0740	BLLAC	0.489	0.433	2	3,13
J1426.4+3625	216.6545	36.4193	FSRQ	0.867	0.345	3	1,3,13
J1427.0+2348	216.7516	23.8000	BLLAC	0.026	-	1	13
J1427.4−1823	216.8580	−18.3845	UNCL	0.678	0.393	3	3,4,6
J1427.6−3305	216.9223	−33.0921	BLLAC	0.404	-	1	6
J1427.7−3215	216.9592	−32.2547	UNCL	0.208	-	1	6
J1427.9−4206	216.9846	−42.1054	FSRQ	-	-	-	
J1428.1+1629	217.0474	16.4811	FSRQ	0.259	0.142	6	1,6,7,8,11,13
J1428.3+5635	217.1031	56.6031	FSRQ	1.258	0.855	4	1,3,6,13
J1428.5+4240	217.1359	42.6725	BLLAC	0.074	0.025	5	5,6,7,8,13
J1428.7−1017	217.1873	−10.2841	UNCL	1.233	0.357	2	3,4
J1428.8+7429	217.1247	74.5006	UNCL	0.245	0.036	4	4,6,12b,13
J1428.9+5406	217.3412	54.1031	FSRQ	1.748	0.801	3	1,3,13
J1429.8−3058	217.4160	−31.0036	UNCL	0.265	0.087	2	4,11
J1431.1−3120	217.7884	−31.3441	UNCL	0.150	0.182	2	6,11
J1432.8+7648	218.0484	76.7322	UNCL	0.840	0.584	4	3,4,6,13
J1433.0−1801	218.2404	−18.0265	FSRQ	2.326	-	1	3
J1433.7−7304	218.4282	−73.0772	BLLAC	0.147	-	1	6
J1434.2+4204	218.5237	42.0544	FSRQ	0.730	0.242	3	1,3,13
J1434.7+1950	218.6658	19.8669	FSRQ	0.877	0.475	3	1,3,13
J1434.8+6640	218.6727	66.6740	BLLAC	0.574	0.231	3	3,4,13
J1435.5+2021	218.8414	20.3550	MIS	0.442	0.375	5	1,3,5,6,13
J1435.9−8348	218.3685	−83.6858	UNCL	-	-	-	
J1436.9+2321	219.1708	23.3509	FSRQ	0.709	0.206	3	1,3,13
J1436.9+5638	219.2405	56.6569	BLLAC	0.274	0.230	2	1,13
J1438.0−3128	219.5449	−31.3746	FSRQ	-	-	-	
J1438.5−4207	219.6531	−42.1186	UNCL	-	-	-	
J1438.6+1205	219.6065	12.0719	BLLAC	0.413	0.074	3	1,6,13
J1438.9+3710	219.7234	37.1765	FSRQ	1.613	0.527	4	1,3,4,13
J1439.3+3932	219.8228	39.5452	BLLAC	0.125	0.032	2	6,13
J1439.5−2525	219.8944	−25.4164	BLLAC	0.141	0.019	3	5,6,11
J1439.7+4958	219.9457	49.9682	BLLAC	0.614	0.602	2	3,13
J1439.9−3953	219.9619	−39.9218	BLLAC	-	-	-	
J1440.0−1530	219.9870	−15.5307	BLLAC	0.702	0.287	2	3,6

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1440.0−2343	219.9977	−23.6947	BLLAC	0.239	0.081	2	4,6
J1440.6−3846	220.1576	−38.7820	BLLAC	0.141	-	1	6
J1440.9+0609	220.2206	6.1712	BLLAC	0.171	-	1	13
J1441.6−1522	220.4392	−15.3934	FSRQ	0.758	0.160	2	3,6
J1441.7+1836	220.4313	18.6196	BLLAC	0.624	0.282	4	1,3,6,13
J1442.0+4348	220.5298	43.8102	BLLAC	0.550	0.262	4	1,3,12c,13
J1442.2+0622	220.5510	6.4239	FSRQ	0.525	0.244	5	3,7,8,12b,13
J1442.6−4623	220.6517	−46.3838	BLLAC	0.085	0.016	2	5,6
J1442.7+1200	220.7012	12.0112	BLLAC	0.105	0.039	6	5,6,7,8,11,13
J1443.1+4728	220.8273	47.4324	NLS1	0.429	0.257	3	1,3,13
J1443.1+5201	220.7615	52.0270	MIS	0.122	0.017	8	5,6,7,8,10,11,12b,13
J1443.6+2515	220.8933	25.2662	BLLAC	0.483	0.044	3	1,12b,13
J1443.9+2501	220.9871	25.0290	FSRQ	0.539	0.370	3	1,3,13
J1443.9−3908	220.9883	−39.1445	BLLAC	0.059	-	1	6
J1445.0−0326	221.2760	−3.4369	BLLAC	0.119	0.029	2	6,13
J1445.9−1626	221.4724	−16.4838	BLLAC	0.989	-	1	3
J1446.0−3039	221.4834	−30.6182	UNCL	-	-	-	
J1446.3+3111	221.6515	31.1795	BLLAC	0.079	-	1	13
J1446.7+1719	221.6473	17.3521	FSRQ	0.756	0.270	4	1,3,6,13
J1446.8−1830	221.6868	−18.4903	UNCL	0.814	0.700	2	3,6
J1447.0−2657	221.7369	−26.9495	BLLAC	0.174	-	1	6
J1448.0+3608	222.0024	36.1420	BLLAC	0.449	0.464	2	3,13
J1449.5+2746	222.3664	27.7806	MIS	0.039	0.023	7	5,6,7,8,10,12b,13
J1449.6−2137	222.4166	−21.6569	FSRQ	0.897	-	1	3
J1449.7−0910	222.4245	−9.1669	UNCL	0.159	0.034	4	4,5,6,11
J1450.4+0910	222.6299	9.1744	FSRQ	1.211	0.748	4	1,3,6,13
J1450.8+5201	222.7499	52.0199	BLLAC	0.369	0.155	3	1,3,13
J1451.4+6355	222.8655	63.9054	BLLAC	0.261	0.249	2	6,13
J1451.5+1415	222.8624	14.2741	MIS	0.459	0.060	6	6,7,8,11,12b,13
J1451.8−3851	223.0219	−38.8555	UNCL	0.204	-	1	6
J1453.0−1318	223.2423	−13.3230	UNCL	-	-	-	
J1453.5+3505	223.3273	35.0943	BLLAC	0.432	0.161	3	1,3,13
J1454.0+4927	223.5536	49.4445	FSRQ	1.195	0.788	4	1,3,6,13
J1454.1+1622	223.5869	16.4068	FSRQ	1.084	0.525	3	1,3,13
J1454.1+2647	223.4733	26.8093	BLLAC	0.757	0.157	3	1,3,13
J1454.4+5124	223.6130	51.4094	BLLAC	0.566	0.682	2	3,13
J1454.4−3744	223.6142	−37.7925	FSRQ	-	-	-	
J1455.0+0247	223.7810	2.8445	BLLAC	0.522	0.232	4	1,3,6,13
J1455.4−3654	223.7901	−36.9187	MIS	0.071	0.025	2	5,6
J1455.8−7601	223.9320	−76.0145	BLLAC	-	-	-	
J1456.0+5051	224.0338	50.8101	BLLAC	1.131	0.002	2	12b,13
J1457.3−4246	224.3042	−42.8102	UNCL	0.358	-	1	6
J1457.4−3539	224.3613	−35.6528	FSRQ	-	-	-	
J1457.8−4642	224.4243	−46.7028	BLLAC	0.082	0.022	2	5,6
J1458.6+3722	224.6866	37.3393	BLLAC	0.545	0.363	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1459.0+6129	224.7196	61.4705	UNCL	0.672	0.179	5	7,8,11,12b,13
J1459.0+7140	224.7816	71.6722	MIS	0.555	0.480	2	3,13
J1459.5+1527	224.8423	15.4485	BLLAC	0.460	0.147	4	1,3,6,13
J1500.7+4752	225.2027	47.8543	BLLAC	0.611	0.161	3	1,3,13
J1500.9+5528	225.2761	55.4641	BLLAC	0.503	0.038	3	1,3,13
J1501.0+2238	225.2576	22.6351	BLLAC	0.073	0.070	2	6,13
J1502.5+5552	225.6211	55.8680	UNCL	-	-	-	
J1503.3+1651	225.8194	16.8546	UNCL	0.674	0.555	3	3,4,13
J1503.5+4759	225.8533	47.9750	MIS	0.337	0.269	3	3,6,13
J1503.7−1540	225.9194	−15.6873	BLLAC	-	-	-	
J1503.9−4247	226.0266	−42.8058	UNCL	-	-	-	
J1504.4+1029	226.1041	10.4942	FSRQ	0.383	0.282	3	1,3,13
J1505.0+0326	226.2770	3.4419	NLS1	0.359	0.116	5	1,3,6,12b,13
J1505.0−3433	226.2599	−34.5491	BLLAC	0.359	-	1	6
J1505.5−8241	226.3561	−82.7086	UNCL	0.329	0.095	2	4,6
J1506.1+3731	226.5397	37.5142	FSRQ	0.595	0.048	5	7,8,11,12b,13
J1506.4+4331	226.5735	43.5704	BLLAC	0.492	0.253	5	1,3,12b,12c,13
J1506.4−0540	226.6542	−5.6681	BLLAC	0.375	0.150	3	6,12b,13
J1506.6+0813	226.6853	8.2335	BLLAC	0.592	0.679	2	3,13
J1507.2+1721	226.8184	17.3508	BLLAC	0.436	0.390	2	3,13
J1507.3−3710	226.8367	−37.1508	UNCL	0.206	-	1	6
J1508.4+7717	227.0452	77.3046	UNCL	0.248	0.127	5	3,4,6,12b,13
J1508.8+2708	227.1776	27.1521	BLLAC	0.171	0.060	7	5,6,7,8,11,12b,13
J1509.6−4334	227.3989	−43.6755	FSRQ	0.216	-	1	6
J1509.7+5556	227.4498	55.9381	BLLAC	0.578	0.643	2	3,13
J1509.8−2906	227.4377	−29.0836	UNCL	-	-	-	
J1510.1+5702	227.5122	57.0454	FSRQ	2.138	1.885	4	1,3,6,13
J1510.8+7959	227.6364	80.0015	UNCL	0.868	0.295	3	3,4,13
J1510.8−0542	227.7233	−5.7187	FSRQ	0.501	0.610	2	3,13
J1511.8−0513	227.9523	−5.2297	BLLAC	0.907	1.074	2	3,13
J1512.1−2255	228.0531	−22.9190	BLLAC	1.581	-	1	3
J1512.2+0202	228.0656	2.0547	MIS	0.244	0.131	5	3,6,7,8,13
J1512.2+4704	228.0594	47.0592	BLLAC	0.532	0.231	6	3,6,7,8,12b,13
J1512.8−0906	228.2106	−9.1000	FSRQ	0.690	-	1	3
J1513.2−7131	228.2185	−71.5315	UNCL	-	-	-	
J1513.4−0753	228.3508	−7.9143	BLLAC	0.149	-	1	6
J1513.4−3231	228.4124	−32.5832	FSRQ	-	-	-	
J1513.4−3721	228.3278	−37.3365	UNCL	-	-	-	
J1514.4−7719	228.6833	−77.3817	BLLAC	-	-	-	
J1514.6−2044	228.6397	−20.7406	UNCL	0.349	0.186	3	3,4,6
J1514.7−3617	228.6703	−36.2847	UNCL	-	-	-	
J1514.8−0949	228.7073	−9.8107	BLLAC	1.119	0.025	2	3,4
J1516.5+0015	229.1676	0.2505	MIS	0.046	0.017	8	5,6,7,8,10,11,12b,13
J1516.8+2918	229.1733	29.3026	BLLAC	0.115	0.022	8	5,6,7,8,10,11,12b,13
J1516.8+3651	229.2052	36.8397	BLLAC	0.814	0.369	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1516.9+1934	229.2367	19.5369	BLLAC	0.503	0.308	4	1,3,6,13
J1517.0+2639	229.2608	26.6497	UNCL	0.549	0.113	5	1,3,4,6,13
J1517.3+6630	229.2698	66.4582	UNCL	0.820	0.362	2	3,13
J1517.7+6525	229.4483	65.4231	BLLAC	0.738	0.830	2	3,13
J1517.7−2422	229.4242	−24.3721	BLLAC	0.081	0.087	3	3,5,6
J1518.0−2731	229.5150	−27.5253	BLLAC	0.070	0.021	2	5,6
J1518.4+0750	229.6111	7.8729	BLLAC	0.642	0.475	3	1,3,13
J1518.6+0614	229.6905	6.2323	MIS	0.057	0.010	8	5,6,7,8,10,11,12b,13
J1518.6+4044	229.6621	40.7501	AMB	0.059	0.007	8	5,6,7,8,10,11,12b,13
J1520.0−0905	229.9962	−9.0739	UNCL	0.902	-	1	3
J1520.4+5546	230.1457	55.7158	BLLAC	0.480	0.264	3	1,3,13
J1520.5+4209	230.1655	42.1865	AMB	0.325	0.272	2	12c,13
J1520.8−0348	230.2038	−3.8144	BLLAC	1.001	-	1	3
J1521.1+0421	230.3439	4.3417	MIS	0.053	0.022	6	5,6,10,11,12b,13
J1521.8+4338	230.4567	43.6109	FSRQ	1.558	0.733	3	1,3,13
J1522.1+3144	230.5416	31.7373	FSRQ	0.793	0.167	3	1,3,13
J1522.6−2730	230.6570	−27.5030	BLLAC	1.056	-	1	3
J1523.2−3941	230.8886	−39.6115	UNCL	0.799	0.801	2	4,6
J1526.1−0831	231.5133	−8.5296	BLLAC	0.587	0.250	2	3,4
J1526.7−1529	231.6945	−15.5074	BLLAC	0.214	0.054	4	3,4,5,6
J1527.3+3117	231.8281	31.2568	FSRQ	1.061	0.324	3	1,3,13
J1528.2−2905	232.0606	−28.9810	UNCL	0.834	0.445	2	3,4
J1529.2+3812	232.3065	38.2049	BLLAC	0.831	0.958	4	1,3,4,13
J1529.7+6733	232.4299	67.5298	UNCL	1.050	-	1	13
J1530.5−3026	232.6714	−30.4329	UNCL	-	-	-	
J1530.9+5736	232.7425	57.6070	BLLAC	0.724	0.294	4	1,3,4,13
J1531.7+4710	232.9158	47.1181	BLLAC	1.038	0.613	4	1,3,4,13
J1532.0+3016	233.0093	30.2747	BLLAC	0.057	0.009	8	5,6,7,8,10,11,12b,13
J1532.7−1319	233.1891	−13.3195	UNCL	0.707	0.094	3	7,8,11
J1533.2+1855	233.2969	18.9081	BLLAC	0.174	0.076	6	6,7,8,11,12b,13
J1533.2+3416	233.3511	34.2779	BLLAC	0.981	1.154	2	3,13
J1534.8+0131	233.7186	1.5178	FSRQ	0.981	0.396	3	1,3,13
J1534.8+3716	233.6967	37.2652	BLLAC	0.119	0.041	6	5,6,7,8,11,13
J1535.0+5320	233.7533	53.3436	BLLAC	1.010	1.280	2	1,13
J1535.3−3135	233.8737	−31.5629	UNCL	0.253	0.063	2	4,6
J1535.4+3919	233.8712	39.3794	BLLAC	0.220	0.067	6	3,6,7,8,12b,13
J1536.8−3155	234.2271	−31.8542	BLLAC	-	-	-	
J1537.7−7957	234.4199	−79.9680	UNCL	-	-	-	
J1537.9−1344	234.4877	−13.7220	UNCL	0.984	0.766	2	1,3
J1539.6+2743	234.9131	27.7439	FSRQ	1.525	0.876	2	1,13
J1539.7−1127	234.9217	−11.4765	BLLAC	0.838	0.850	2	3,4
J1539.9+4220	234.8570	42.2912	BLLAC	0.808	0.485	2	3,13
J1540.1+8155	235.0662	81.9183	BLLAC	0.227	0.241	4	3,5,6,13
J1540.4+6606	235.0001	66.0976	UNCL	0.693	0.289	4	3,4,12b,13
J1540.7+1449	235.2062	14.7961	BLLAC	0.370	0.305	2	3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1541.7+1413	235.4587	14.2438	BLLAC	0.159	0.043	4	6,11,12b,13
J1541.9−2915	235.5129	−29.2526	BLLAC	1.403	-	1	3
J1542.3+1801	235.5815	17.9355	MIS	1.120	0.688	3	1,3,13
J1543.0+6130	235.7373	61.4987	BLLAC	0.528	0.652	2	3,13
J1543.6+0452	235.8914	4.8720	BLLAC	0.024	0.010	5	5,6,11,12b,13
J1544.3−0649	236.0819	−6.8209	BLLAC	0.138	0.044	3	4,5,6
J1545.8−2336	236.4441	−23.6580	BLLAC	0.106	0.012	3	5,6,11
J1546.0+0819	236.5177	8.3204	BLLAC	1.056	1.248	2	3,13
J1546.1−1003	236.5478	−10.0573	UNCL	1.336	-	1	3
J1546.5+1816	236.5988	18.2876	BLLAC	0.538	0.421	3	1,3,13
J1547.3−2802	236.8006	−28.0393	UNCL	0.876	-	1	3
J1548.3+1456	237.1016	14.9508	BLLAC	0.251	0.021	7	3,6,7,8,11,12b,13
J1548.3+6615	237.1305	66.2758	UNCL	0.461	0.131	4	3,4,6,13
J1548.8−2250	237.2073	−22.8507	BLLAC	0.097	0.000	2	5,6
J1549.0+7846	237.1561	78.7574	BLLAC	0.588	0.133	3	3,4,13
J1549.3+4234	237.3278	42.5835	BLLAC	0.799	0.527	4	1,3,4,13
J1549.3+6310	237.4888	63.1687	UNCL	1.254	0.798	3	3,4,13
J1549.4+7409	237.3638	74.1589	UNCL	0.342	0.201	4	3,4,6,13
J1549.5+0236	237.3727	2.6170	FSRQ	0.486	0.508	2	3,13
J1549.6+1710	237.3720	17.1411	BLLAC	0.449	0.308	4	1,3,6,13
J1549.8−0659	237.4668	−6.9855	BLLAC	0.557	0.390	3	3,4,6
J1549.8−3044	237.4429	−30.7503	BLLAC	-	-	-	
J1550.7+0528	237.6470	5.4529	FSRQ	0.624	0.363	3	1,3,13
J1550.7+7006	237.4852	70.2156	UNCL	0.937	0.347	4	3,4,6,13
J1550.8−0822	237.7220	−8.3797	UNCL	0.284	0.021	2	3,4
J1550.8−1750	237.8108	−17.9173	UNCL	1.306	0.031	2	1,3
J1552.0+0850	238.0136	8.8465	BLLAC	0.608	0.643	2	3,13
J1553.3+0600	238.3794	6.0288	BLLAC	0.485	0.129	5	6,7,8,12b,13
J1553.5−3118	238.3898	−31.3087	BLLAC	0.084	-	1	6
J1553.6+1257	238.3862	12.9477	FSRQ	0.809	1.044	2	3,13
J1553.6−2422	238.3818	−24.3683	SEY	1.282	-	1	3
J1554.4−1215	238.6358	−12.2237	UNCL	0.625	0.474	3	3,4,6
J1554.9+2143	238.7524	21.6999	BLLAC	0.541	0.538	2	3,13
J1555.7+1111	238.9294	11.1901	BLLAC	0.028	-	1	13
J1557.5−7040	239.4007	−70.6745	UNCL	-	-	-	
J1557.9−0001	239.4643	−0.0307	FSRQ	0.670	0.207	3	1,3,13
J1557.9−1404	239.5914	−14.1664	SEY	0.056	0.032	3	5,6,11
J1558.8+5625	239.7012	56.4206	BLLAC	0.397	0.290	3	3,4,13
J1559.1+6736	239.7336	67.6133	UNCL	0.581	0.463	4	3,4,6,13
J1559.8−2525	240.0224	−25.4111	BLLAC	0.353	0.144	3	3,4,6
J1559.9+2319	239.9675	23.2824	BLLAC	0.673	0.710	2	3,13
J1600.0+8510	240.1321	85.1637	UNCL	0.986	-	1	3
J1602.0−0641	240.4441	−6.7156	UNCL	1.097	1.064	2	3,4
J1602.1+3324	240.5303	33.4481	MIS	1.044	0.065	3	4,12b,13
J1602.2+3051	240.5753	30.8526	BLLAC	0.861	0.969	2	3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1602.9−1928	240.7023	−19.4965	UNCL	1.111	-	1	3
J1603.5−7112	241.3161	−71.2165	UNCL	-	-	-	
J1603.8+1104	240.9247	11.0969	BLLAC	0.475	0.473	3	3,6,13
J1603.8+5009	240.9146	50.1654	BLLAC	0.471	0.029	2	1,13
J1604.6+5714	241.1556	57.2435	FSRQ	0.567	0.355	3	1,3,13
J1604.7+1734	241.1525	17.5567	BLLAC	0.674	0.467	4	1,3,6,13
J1604.9−3414	241.2305	−34.2341	UNCL	-	-	-	
J1605.1−1140	241.3230	−11.6575	BLLAC	1.052	0.197	2	3,4
J1605.5+5423	241.3292	54.3497	BLLAC	0.212	0.043	5	6,7,8,12b,13
J1605.8+7208	241.3987	72.1479	AMB	0.407	0.097	3	4,6,13
J1606.2+1346	241.5766	13.7591	BLLAC	0.178	0.072	6	6,7,8,11,12b,13
J1606.3+5629	241.5858	56.5053	SEY	0.265	0.015	3	6,7,8
J1606.5+2717	241.7429	27.2849	FSRQ	0.695	0.463	3	1,3,13
J1606.6+1324	241.7277	13.3261	UNCL	-	-	-	
J1607.0+1550	241.7768	15.8596	BLLAC	0.439	0.145	5	1,3,6,12b,13
J1608.0−2038	241.9872	−20.6618	UNCL	-	-	-	
J1608.3+4012	242.0923	40.2050	FSRQ	0.621	0.204	5	1,3,6,12b,13
J1608.7+1029	242.1925	10.4855	FSRQ	0.697	0.421	3	1,3,13
J1610.6+2414	242.6751	24.2469	FSRQ	0.833	0.407	4	1,3,6,13
J1610.7−6648	242.6936	−66.8170	BLLAC	0.100	-	1	4
J1612.4−0554	243.1198	−5.9650	BLLAC	0.021	0.011	3	5,6,11
J1612.4−3100	243.0834	−30.9941	BLLAC	0.900	-	1	4
J1613.3−1907	243.3632	−19.1434	UNCL	0.632	0.443	2	3,4
J1613.6+3411	243.4211	34.2133	FSRQ	0.532	0.575	3	3,6,13
J1614.8−0850	243.6833	−8.8557	UNCL	0.344	0.209	2	4,6
J1615.6+2130	243.8796	21.5031	FSRQ	0.638	0.185	4	1,3,6,13
J1615.6+4712	243.9217	47.1866	MIS	0.165	0.063	6	3,5,6,7,8,13
J1616.6+4630	244.0157	46.5403	FSRQ	1.114	0.116	3	1,3,13
J1616.7+3327	244.1407	33.5121	BLLAC	0.572	0.255	3	1,3,13
J1616.7+4107	244.2764	41.1131	BLLAC	0.186	0.063	7	3,6,7,8,11,12b,13
J1617.2−2535	244.3357	−25.6232	UNCL	1.813	-	1	3
J1617.3−1513	244.3055	−15.1830	UNCL	0.100	-	1	4
J1617.9−7718	244.4553	−77.2885	FSRQ	0.197	-	1	6
J1618.0+5139	244.3728	51.6723	FSRQ	1.834	0.447	3	1,3,13
J1618.8+0620	244.6275	6.3697	BLLAC	0.520	0.045	3	1,3,13
J1619.0+7536	244.8073	75.6315	UNCL	0.527	-	1	13
J1619.0−8346	244.9593	−83.8246	UNCL	0.063	0.005	2	5,6
J1619.6+5536	244.8335	55.6010	BLLAC	0.464	0.254	3	1,3,13
J1621.7−1103	245.4583	−11.0325	UNCL	-	-	-	
J1623.4+0858	245.8773	8.9567	BLLAC	0.482	0.190	4	1,3,6,13
J1623.6+5743	246.1034	57.6879	CLAGN	0.556	0.144	3	1,3,13
J1624.6+5651	246.1341	56.8744	BLLAC	0.605	0.522	2	3,13
J1625.7+4134	246.4903	41.5780	FSRQ	1.038	0.459	4	3,7,8,13
J1625.7−2527	246.4454	−25.4606	FSRQ	1.311	-	1	3
J1626.0-2950	246.5251	-29.8575	FSRQ	1.121	-	1	3

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1626.3+3514	246.6078	35.2282	BLLAC	0.402	0.120	3	1,4,13
J1626.6−7639	246.6590	−76.6488	BLLAC	0.095	0.012	2	5,6
J1626.8+4337	246.4721	43.7872	FSRQ	0.801	0.287	3	1,3,13
J1627.3+3148	246.8041	31.8322	BLLAC	0.603	0.124	3	1,3,13
J1627.3+4758	246.9426	48.0569	FSRQ	1.094	0.887	4	1,3,6,13
J1627.4−3301	246.8546	−33.0562	UNCL	-	-	-	
J1627.7+0251	246.9756	2.8526	UNCL	0.472	0.205	3	3,4,13
J1628.3−3343	247.0829	−33.7282	UNCL	-	-	-	
J1628.6+7706	247.1377	77.1139	BLLAC	0.410	0.240	5	1,3,4,6,13
J1630.6+8234	248.1332	82.5379	MIS	0.020	0.012	4	5,6,11,13
J1630.7+5221	247.6798	52.3607	BLLAC	0.492	0.574	2	3,13
J1631.2+1046	247.8282	10.8673	UNCL	0.866	0.178	4	1,3,4,13
J1631.2+4926	247.8189	49.4610	SEY	0.407	0.164	5	3,6,7,8,13
J1632.4+5800	248.0577	58.0146	UNCL	0.234	0.054	4	4,6,12b,13
J1632.8−1048	248.2088	−10.8756	UNCL	1.259	0.134	3	1,3,4
J1635.2+3808	248.8146	38.1346	FSRQ	1.141	1.383	2	3,13
J1635.6+3500	248.7782	34.9812	BLLAC	0.520	0.301	3	1,3,13
J1635.6+3628	248.9468	36.4917	FSRQ	1.919	1.343	2	1,13
J1636.3+7128	248.9672	71.4816	FSRQ	0.226	0.193	4	3,5,6,13
J1636.5−0454	249.1333	−4.9184	UNCL	0.174	0.051	4	6,7,8,11
J1636.7+2627	249.2145	26.4491	BLLAC	0.440	0.386	2	3,13
J1637.1+1316	249.3197	13.2441	BLLAC	0.979	0.883	3	1,3,13
J1637.2+4327	249.2896	43.4334	BLLAC	0.179	0.057	8	3,6,7,8,11,12b,12c,13
J1637.6+4548	249.3611	45.7970	BLLAC	0.147	0.037	7	5,6,7,8,11,12b,13
J1637.7+4717	249.4380	47.2927	FSRQ	0.696	0.207	3	1,3,13
J1637.7+7326	249.5069	73.4377	BLLAC	0.892	0.896	2	3,13
J1638.1+5721	249.5561	57.3400	FSRQ	0.442	0.572	2	3,13
J1639.2+4129	249.8159	41.4760	FSRQ	0.852	0.729	3	1,3,13
J1640.2+0629	250.0461	6.4742	BLLAC	0.437	0.314	3	3,4,13
J1640.3+6850	250.0623	68.8761	UNCL	0.715	0.778	3	3,4,13
J1640.4+3945	250.1235	39.7795	FSRQ	0.945	0.257	3	1,3,13
J1640.9+1143	250.2454	11.7345	BLLAC	0.043	0.007	7	5,6,7,8,11,12b,13
J1641.9−0621	250.5091	−6.3566	BLLAC	0.718	0.406	2	1,3
J1642.3−8108	250.7389	−81.1431	BLLAC	-	-	-	
J1642.4+2211	250.5846	22.1953	BLLAC	0.372	0.091	2	1,13
J1642.9+3948	250.7450	39.8103	FSRQ	0.368	0.348	2	3,13
J1643.0+3223	250.7544	32.3511	BLLAC	1.421	0.776	3	1,3,13
J1643.0−7714	251.0672	−77.2636	MIS	-	-	-	
J1643.5−0646	250.8705	−6.7722	BLLAC	0.060	0.031	3	5,6,11
J1643.7+3317	250.9144	33.2800	BLLAC	0.492	0.115	6	4,6,7,8,12b,13
J1644.2+4546	251.0832	45.7790	BLLAC	0.166	0.046	7	5,6,7,8,11,12b,13
J1644.9+2620	251.1772	26.3203	NLS1	0.184	0.094	5	3,6,7,8,13
J1645.6+6329	251.4940	63.5030	FSRQ	0.689	0.272	3	1,3,13
J1646.0−0942	251.5049	−9.6884	UNCL	0.187	-	1	6
J1646.6+7422	251.5632	74.3197	UNCL	0.920	-	1	13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1646.7−1330	251.7157	−13.4800	UNCL	0.300	-	1	4
J1647.4−6438	251.9073	−64.6334	BLLAC	0.360	-	1	6
J1647.5+2911	251.8620	29.1638	BLLAC	0.099	0.019	8	5,6,7,8,10,11,12b,13
J1647.5+4950	251.8955	49.8335	SEY	0.089	0.081	9	3,5,6,7,8,10,11,12b,13
J1648.0+2221	252.0064	22.4092	BLLAC	0.762	0.107	5	7,8,11,12b,13
J1648.2+4232	252.1313	42.5562	FSRQ	-	-	-	
J1649.4+5235	252.3541	52.5875	BLLAC	0.292	0.261	2	3,13
J1649.6+0411	252.3653	4.2011	UNCL	0.712	0.337	4	1,3,4,13
J1650.7+0831	252.6565	8.4145	FSRQ	0.725	0.394	2	3,13
J1650.9+0429	252.7229	4.5026	UNCL	-	-	-	
J1651.6+7219	252.9165	72.3069	BLLAC	0.114	0.115	2	4,13
J1652.7+4024	253.2080	40.3862	BLLAC	0.669	0.610	3	1,3,13
J1653.8+3945	253.4676	39.7602	BLLAC	0.029	0.018	4	5,6,10,13
J1656.0+2047	253.9440	20.7563	UNCL	1.083	-	1	13
J1656.9−2010	254.2298	−20.1823	BLLAC	-	-	-	
J1657.0+6010	254.2010	60.2046	FSRQ	0.637	0.258	3	3,12b,13
J1657.7+4808	254.4453	48.1425	CLAGN	0.683	0.265	4	3,7,8,13
J1657.7−6120	254.4542	−61.3605	UNCL	-	-	-	
J1658.4+6150	254.5347	61.8339	BLLAC	0.197	0.040	5	6,7,8,12b,13
J1659.0+2627	254.8506	26.4936	FSRQ	0.525	0.347	3	1,3,13
J1700.0+6830	255.0387	68.5019	NLS1	0.182	0.168	2	6,13
J1701.0+6613	255.2466	66.2076	UNCL	0.795	0.277	4	1,3,4,13
J1701.3+3956	255.3526	39.9103	BLLAC	0.317	0.230	3	3,6,13
J1702.2+2642	255.5401	26.7207	BLLAC	0.632	0.642	2	3,13
J1702.6+3114	255.6606	31.2621	BLLAC	0.702	0.714	4	1,3,4,13
J1703.6−6213	255.9023	−62.2111	FSRQ	0.258	-	1	6
J1704.1+7647	255.9912	76.7695	UNCL	0.592	0.262	4	1,3,4,13
J1704.2+1234	256.0399	12.5726	BLLAC	0.344	0.173	4	1,3,6,13
J1704.5−0527	256.1410	−5.4780	BLLAC	1.260	1.281	2	3,4
J1705.0+7134	256.1957	71.6382	BLLAC	0.462	0.310	3	1,3,13
J1705.5−7423	256.4615	−74.3759	UNCL	0.206	-	1	6
J1706.1+1000	256.4841	10.0049	UNCL	0.346	0.037	5	7,8,11,12b,13
J1706.9+4543	256.8241	45.6032	FSRQ	0.479	0.600	2	3,13
J1707.5+1649	256.8815	16.8124	SEY	0.368	0.194	4	1,3,6,13
J1707.9+0016	256.9351	0.2970	UNCL	0.841	0.565	4	1,3,4,6
J1709.7+4318	257.4212	43.3124	FSRQ	0.456	0.218	3	1,3,13
J1710.1−2030	257.5405	−20.5085	UNCL	-	-	-	
J1712.7+2932	258.2033	29.5213	BLLAC	0.304	0.331	4	3,7,8,13
J1713.7+8844	258.9721	88.7376	UNCL	0.625	0.166	2	3,4
J1714.0−2029	258.5227	−20.4637	UNCL	-	-	-	
J1715.0+2616	258.7076	26.2384	UNCL	0.310	0.099	8	3,4,6,7,8,11,12b,13
J1715.8+2151	259.0466	21.8705	FSRQ	0.354	0.071	6	3,6,7,8,12b,13
J1716.1+6836	259.0581	68.6108	FSRQ	0.431	0.339	3	3,6,13
J1716.6−6707	259.0931	−67.1067	BLLAC	0.157	-	1	6
J1717.3−6045	259.2327	−60.7624	UNCL	-	-	-	

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1717.5−8114	259.2978	−81.2527	UNCL	0.059	0.008	2	5,6
J1719.2+1745	259.8044	17.7518	BLLAC	0.397	0.382	2	3,13
J1719.3+1205	259.8396	12.1228	UNCL	0.407	0.282	3	3,4,13
J1720.2+3824	260.0431	38.4323	AMB	0.361	0.086	6	3,6,7,8,12b,13
J1722.6+6104	260.6669	61.0999	FSRQ	1.399	0.673	4	1,3,6,13
J1722.7+1014	260.6858	10.2266	FSRQ	0.450	0.145	4	1,3,6,13
J1723.6−7714	260.9619	−77.2307	UNCL	-	-	-	
J1724.1+3304	261.0592	33.0511	SEY	0.391	0.096	5	3,6,7,8,13
J1724.2+4005	261.0226	40.0768	BLLAC	0.545	0.220	6	3,7,8,11,12b,13
J1724.2−6501	260.9210	−65.0102	MIS	0.010	0.004	2	5,6
J1724.9+7654	260.9977	76.8865	FSRQ	0.485	0.303	3	1,3,13
J1725.0+1152	261.2681	11.8710	BLLAC	0.028	-	1	13
J1725.4+5254	261.3347	52.9171	BLLAC	0.068	0.015	8	5,6,7,8,10,11,12b,13
J1725.5+5851	261.3959	58.8611	BLLAC	0.399	0.394	2	3,13
J1727.2+0644	261.8335	6.6893	UNCL	-	-	-	
J1727.4+4530	261.8652	45.5110	FSRQ	0.467	0.384	3	1,3,13
J1727.9−0654	261.9655	−6.9690	UNCL	-	-	-	
J1728.0+1216	262.0294	12.2610	FSRQ	0.857	0.328	2	3,13
J1728.3+5013	262.0776	50.2196	BLLAC	0.056	0.016	5	5,6,11,12b,13
J1728.4+0427	262.1040	4.4514	FSRQ	0.224	0.007	2	3,6
J1728.5−7303	261.5046	−73.0000	UNCL	-	-	-	
J1728.6−7448	262.1886	−74.8976	UNCL	-	-	-	
J1730.6+0024	262.6458	0.4107	FSRQ	0.541	0.149	2	3,6
J1730.6+3805	262.6866	38.0819	UNCL	0.166	0.020	5	4,6,11,12b,13
J1730.8+3715	262.6960	37.2486	BLLAC	0.135	0.037	6	3,5,6,7,8,13
J1733.0−1305	263.2613	−13.0804	FSRQ	0.999	-	1	3
J1733.4+5428	263.4180	54.4435	BLLAC	0.401	0.026	6	6,7,8,11,12b,13
J1733.6−6054	263.4101	−60.9283	UNCL	-	-	-	
J1734.0+0805	263.5022	8.1079	UNCL	-	-	-	
J1734.3+3858	263.5857	38.9643	FSRQ	0.526	0.596	2	3,13
J1735.4−1118	263.8632	−11.2929	UNCL	0.705	0.541	2	3,6
J1735.8−5932	263.9678	−59.5453	UNCL	0.215	-	1	6
J1736.0+2033	264.0219	20.5503	BLLAC	0.800	0.889	2	3,13
J1736.6+0628	264.1191	6.5299	FSRQ	1.341	0.799	2	1,3
J1738.0+0236	264.3947	2.6140	UNCL	0.177	0.008	2	6,11
J1738.0+8717	264.3420	87.2957	UNCL	-	-	-	
J1738.3+3228	264.6688	32.4025	SEY	0.108	0.038	4	3,5,6,13
J1738.8+3822	264.6770	38.3507	UNCL	0.244	0.049	5	4,6,11,12b,13
J1739.5+4955	264.8641	49.9176	FSRQ	0.984	0.386	2	3,13
J1740.0+4737	264.9880	47.6329	BLLAC	0.570	0.114	3	1,3,13
J1740.5+5211	265.1541	52.1954	FSRQ	0.537	0.597	2	3,13
J1740.6+5346	265.1522	53.7733	UNCL	0.755	0.396	3	1,3,13
J1741.1+7226	265.3452	72.4144	BLLAC	0.134	0.053	6	3,5,6,11,12b,13
J1741.9+2555	265.4482	25.9120	BLLAC	0.610	0.259	4	1,3,4,13
J1742.5+5944	265.6333	59.7519	BLLAC	0.438	0.316	3	3,4,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1743.9+3747	265.9485	37.7983	FSRQ	1.319	0.628	2	3,13
J1744.0+1935	265.9910	19.5858	BLLAC	0.041	0.010	5	5,6,11,12b,13
J1744.2−0353	265.9952	−3.8346	FSRQ	1.241	-	1	3
J1744.4+1851	266.0825	18.8717	BLLAC	0.605	0.493	4	1,3,4,13
J1744.6−5713	266.1479	−57.2530	UNCL	-	-	-	
J1745.1+4731	266.2580	47.5462	UNCL	0.999	0.049	2	3,13
J1745.4−0753	266.3629	−7.8844	BLLAC	0.854	0.946	2	3,6
J1745.6+3950	266.4073	39.8586	BLLAC	0.154	0.038	3	11,12b,13
J1746.8−5235	266.7737	−52.6090	UNCL	-	-	-	
J1747.1−5453	266.8518	−54.8393	UNCL	-	-	-	
J1747.2+4937	266.7596	49.6336	BLLAC	0.477	0.113	3	7,8,12b
J1747.6−5308	266.8342	−53.1723	UNCL	-	-	-	
J1747.9+4704	266.8610	46.9808	BLLAC	0.785	0.302	4	1,3,6,13
J1748.0+3403	267.0242	34.0670	FSRQ	0.664	0.604	2	3,13
J1748.1+2702	267.0698	27.0759	UNCL	0.644	0.263	3	3,4,13
J1748.6+7005	267.1368	70.0974	BLLAC	0.676	0.869	2	3,13
J1749.0+4321	267.2515	43.3642	BLLAC	0.316	0.193	2	3,13
J1751.5+0938	267.8867	9.6502	CLAGN	1.079	-	1	3
J1751.6+2921	267.9278	29.3473	UNCL	0.736	0.270	4	3,4,6,13
J1752.1+4531	268.1091	45.5165	UNCL	0.207	0.065	6	6,7,8,11,12b,13
J1753.6−5014	268.4106	−50.2540	UNCL	-	-	-	
J1753.7+2847	268.4270	28.8014	FSRQ	0.766	0.458	3	3,6,13
J1754.2+3212	268.5492	32.2064	BLLAC	0.659	0.796	2	3,13
J1754.5−6425	268.6750	−64.3961	BLLAC	-	-	-	
J1754.7+3444	268.7129	34.7131	UNCL	0.544	0.192	4	3,4,6,13
J1756.3+5522	269.0662	55.3717	BLLAC	1.486	1.911	2	3,13
J1756.6+1553	269.1405	15.8955	FSRQ	0.581	0.202	2	3,6
J1756.9+1531	269.2213	15.5891	BLLAC	0.564	0.174	3	3,4,13
J1757.0+7032	269.3052	70.5604	BLLAC	-	-	-	
J1758.2+6532	269.3497	65.6027	BLLAC	0.527	0.151	4	1,3,4,13
J1758.3+1429	269.5800	14.4991	UNCL	0.152	-	1	11
J1759.1−4822	269.7436	−48.3535	UNCL	-	-	-	
J1800.1+2812	270.0085	28.1794	UNCL	0.383	0.023	2	4,13
J1800.1+7037	269.9542	70.6226	BLLAC	-	-	-	
J1800.6+7828	270.1903	78.4678	BLLAC	0.596	0.669	2	3,13
J1801.5+2123	270.3520	21.3626	UNCL	-	-	-	
J1801.5+4404	270.3846	44.0728	FSRQ	0.329	0.274	3	3,6,13
J1803.4−6510	270.8479	−65.1269	FSRQ	-	-	-	
J1806.2+6143	271.5831	61.6884	UNCL	0.679	0.460	4	3,4,6,13
J1806.3+5345	271.6346	53.7143	UNCL	0.961	0.812	2	3,13
J1806.8+6949	271.7112	69.8245	BLLAC	0.041	0.002	2	5,13
J1806.9−8038	271.6785	−80.7093	UNCL	-	-	-	
J1807.2+6429	271.8840	64.4906	BLLAC	0.197	0.045	6	6,7,8,11,12b,13
J1807.9+4650	272.0050	46.8280	BLLAC	0.441	0.446	2	3,13
J1807.9−6412	271.9751	−64.2306	FSRQ	0.234	-	1	6

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1808.1−5013	272.0576	−50.1982	FSRQ	-	-	-	
J1808.2+3500	272.0480	35.0219	UNCL	0.365	0.396	2	3,13
J1808.8+2419	272.1904	24.3183	UNCL	0.462	0.137	6	4,6,7,8,12b,13
J1808.8+3522	272.2071	35.3452	BLLAC	0.150	0.039	6	4,5,6,11,12b,13
J1809.3+2042	272.3560	20.6919	BLLAC	0.168	-	1	6
J1809.7+2910	272.4391	29.1722	BLLAC	0.532	0.544	2	3,13
J1810.7+5335	272.6583	53.5838	BLLAC	0.556	0.455	3	3,4,13
J1811.0+1608	272.7090	16.1391	BLLAC	1.362	1.165	2	3,6
J1811.3+0340	272.8251	3.6871	UNCL	0.717	0.714	2	3,6
J1813.5+3144	273.3967	31.7382	BLLAC	0.084	-	1	13
J1813.6+0614	273.3892	6.2617	BLLAC	0.838	0.863	2	3,6
J1814.0+3828	273.5143	38.4695	BLLAC	0.275	0.073	4	4,6,12b,13
J1814.2+4114	273.5946	41.2182	FSRQ	0.846	0.400	2	3,13
J1814.4+2953	273.4053	29.8772	FSRQ	1.070	0.309	2	3,13
J1816.9−4942	274.2333	−49.7291	FSRQ	0.384	-	1	6
J1818.6+0903	274.6669	9.0628	NLS1	1.172	-	1	3
J1819.1+2133	274.7717	21.5427	BLLAC	0.715	0.420	2	3,4
J1820.3+3624	275.0874	36.3953	BLLAC	0.319	0.069	3	4,12b,13
J1821.6+6819	275.4979	68.3119	FSRQ	1.050	0.864	2	3,13
J1822.0+1600	275.5415	16.0041	UNCL	1.129	-	1	3
J1823.3−3720	275.8012	−37.4010	UNCL	-	-	-	
J1823.5+6858	275.8869	68.9646	CLAGN	0.350	0.247	2	6,13
J1824.1+5651	276.0295	56.8504	BLLAC	0.382	0.388	2	3,13
J1824.5+4311	276.0794	43.1637	BLLAC	0.254	0.130	4	1,6,12b,13
J1825.1−5231	276.3075	−52.5162	UNCL	-	-	-	
J1826.0−5037	276.4618	−50.6543	UNCL	0.900	-	1	4
J1827.6−4029	276.8533	−40.4844	UNCL	-	-	-	
J1828.7+3230	277.1479	32.5189	UNCL	-	-	-	
J1829.1+2729	277.3082	27.4841	UNCL	-	-	-	
J1829.2−5813	277.3017	−58.2320	FSRQ	-	-	-	
J1829.3+5402	277.3512	54.0499	BLLAC	0.404	0.454	2	3,13
J1829.5+4845	277.3824	48.7462	MIS	0.409	0.437	2	3,13
J1829.9+3934	277.5151	39.6106	UNCL	0.450	0.325	3	3,4,13
J1830.0+1324	277.5032	13.4040	BLLAC	0.773	0.614	2	3,6
J1830.0−5225	277.5180	−52.4386	UNCL	-	-	-	
J1830.2−4443	277.5036	−44.6866	UNCL	-	-	-	
J1831.9+3820	278.0041	38.3603	BLLAC	0.173	0.029	6	4,5,6,11,12b,13
J1832.6−5658	278.1291	−56.9891	BLLAC	-	-	-	
J1834.2+3136	278.5756	31.6068	BLLAC	0.236	0.026	2	3,6
J1834.7−5858	278.6145	−58.9434	BLLAC	-	-	-	
J1836.4+3137	279.0885	31.6074	BLLAC	0.427	0.295	2	3,6
J1837.0+5347	279.2947	53.7850	UNCL	0.919	0.235	4	3,4,6,13
J1838.0−5959	279.5281	−60.0089	UNCL	0.200	-	1	4
J1838.4−6023	279.5860	−60.4229	BLLAC	0.103	0.014	2	5,6
J1838.8+4802	279.7048	48.0429	BLLAC	0.178	0.163	2	4,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1838.9−3457	279.8482	−34.8969	UNCL	0.454	-	1	6
J1839.6−7107	279.3696	−71.1454	FSRQ	-	-	-	
J1840.6−5545	280.3229	−55.7381	UNCL	-	-	-	
J1841.0+6115	280.1472	61.2353	UNCL	0.752	0.242	3	3,12b,13
J1841.3+2909	280.3405	29.1614	BLLAC	0.116	0.002	2	5,6
J1841.8+3218	280.4460	32.3109	BLLAC	0.689	0.652	2	3,4
J1842.3+6810	280.6402	68.1570	FSRQ	0.359	0.364	2	3,13
J1842.4+7613	280.6068	76.1807	UNCL	0.344	0.107	5	3,4,6,12b,13
J1842.4−5840	280.6242	−58.6994	BLLAC	0.304	0.005	2	4,6
J1843.4−4835	280.8109	−48.6064	MIS	0.080	-	1	6
J1844.9+5709	281.2123	57.1607	BLLAC	0.491	0.529	2	3,13
J1846.7+7238	281.5535	72.6307	UNCL	0.870	0.169	3	3,4,13
J1848.1−4230	282.0258	−42.5075	UNCL	-	-	-	
J1848.4+3217	282.0920	32.3174	NLS1	1.717	-	1	3
J1848.5+3243	282.1432	32.7334	FSRQ	0.629	0.434	2	3,6
J1848.5+6537	282.0929	65.6158	BLLAC	0.212	0.023	2	6,12b
J1848.6−2711	282.1979	−27.3050	UNCL	-	-	-	
J1848.9+4247	282.1962	42.7608	BLLAC	0.222	0.238	2	4,13
J1849.2+6705	282.3170	67.0949	FSRQ	0.714	0.723	2	3,13
J1849.3−6447	282.3601	−64.8253	UNCL	0.243	-	1	6
J1849.4+2745	282.3822	27.8002	BLLAC	0.739	0.425	2	3,6
J1849.4−4313	282.3580	−43.2370	BLLAC	-	-	-	
J1850.5+2631	282.6001	26.5316	AMB	0.200	-	1	4
J1851.5+3406	282.9217	34.1153	UNCL	0.876	0.452	2	3,6
J1852.4+4856	283.1189	48.9299	FSRQ	0.666	0.046	2	3,13
J1853.8+6714	283.4671	67.2319	BLLAC	0.185	0.026	4	6,11,12b,13
J1854.6−6007	283.7153	−60.1566	UNCL	-	-	-	
J1855.8−2028	283.9812	−20.4504	UNCL	-	-	-	
J1858.1+7318	284.5849	73.2870	UNCL	0.471	0.219	3	3,4,13
J1858.3+4321	284.5560	43.4145	BLLAC	0.143	0.032	6	4,5,6,11,12b,13
J1858.3−2511	284.5795	−25.1808	UNCL	1.289	-	1	3
J1858.7+5708	284.7229	57.1360	SEY	0.396	0.317	3	3,6,13
J1901.7−5140	285.4542	−51.6522	UNCL	-	-	-	
J1902.9−6748	285.7551	−67.8266	FSRQ	-	-	-	
J1903.2+5540	285.7984	55.6773	BLLAC	0.477	0.530	2	3,13
J1904.1+3627	286.0494	36.4497	BLLAC	0.078	0.012	3	5,6,11
J1906.7+5419	286.7393	54.3361	UNCL	-	-	-	
J1909.5+3511	287.3921	35.1804	UNCL	-	-	-	
J1909.7−2140	287.4381	−21.6598	UNCL	-	-	-	
J1910.0−2453	287.5646	−24.7959	UNCL	0.334	-	1	11
J1911.2−2006	287.7902	−20.1153	FSRQ	-	-	-	
J1911.4−1908	287.8739	−19.1402	BLLAC	0.136	0.035	2	6,11
J1912.4+3738	288.1047	37.6768	FSRQ	0.731	0.597	2	3,6
J1912.4−1222	288.1230	−12.3836	UNCL	1.008	1.073	2	3,6
J1912.7−1250	288.2128	−12.8213	UNCL	-	-	-	

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1913.0−8009	288.1667	−80.1683	FSRQ	-	-	-	
J1913.4−3629	288.3370	−36.5054	UNCL	0.600	-	1	4
J1913.9+4439	288.5078	44.6423	BLLAC	0.943	0.858	2	3,4
J1916.7−1516	289.2188	−15.3167	UNCL	0.968	0.545	2	3,6
J1917.7−1921	289.4367	−19.3588	BLLAC	0.121	0.047	2	6,11
J1917.7−6442	289.3919	−64.5955	UNCL	-	-	-	
J1917.7−6930	289.1512	−69.4759	UNCL	-	-	-	
J1918.1+3752	289.5402	37.8870	UNCL	0.196	-	1	6
J1918.2−4111	289.5669	−41.1920	BLLAC	-	-	-	
J1921.3−1231	290.3497	−12.5318	BLLAC	0.873	0.547	2	3,6
J1921.7+5817	290.4902	58.2837	UNCL	0.430	0.132	3	4,6,12b
J1921.8−1607	290.4647	−16.1202	BLLAC	-	-	-	
J1922.5−7453	290.6759	−74.8991	UNCL	0.400	-	1	4
J1923.4−2503	290.8559	−25.0358	UNCL	0.506	0.259	2	4,6
J1923.5−2104	290.8841	−21.0759	FSRQ	1.108	-	1	3
J1924.2−1549	291.0493	−15.8172	BLLAC	0.600	-	1	4
J1924.3−5458	291.0427	−54.9522	UNCL	0.300	-	1	4
J1924.8−2914	291.2127	−29.2417	FSRQ	0.740	-	1	3
J1925.1−1019	291.2633	−10.3034	UNCL	1.281	-	1	3
J1925.1−3358	291.3209	−34.0171	FSRQ	-	-	-	
J1925.8−2220	291.4158	−22.3264	BLLAC	1.348	-	1	3
J1926.8+6154	291.7079	61.9118	BLLAC	0.112	-	1	13
J1927.5+6117	291.8768	61.2925	BLLAC	0.590	0.624	2	3,13
J1929.4+6146	292.3962	61.7748	BLLAC	0.190	0.071	4	3,4,6,13
J1931.3−1556	292.8236	−15.9647	UNCL	0.518	0.385	2	3,6
J1933.2−4539	293.1870	−45.6105	FSRQ	0.160	-	1	6
J1934.2+6002	293.5818	60.0277	UNCL	1.377	1.485	2	3,13
J1934.3+6541	293.4889	65.6713	FSRQ	1.431	1.272	2	3,13
J1934.3−2419	293.5532	−24.3223	BLLAC	0.445	0.288	2	3,6
J1934.5+6139	293.6695	61.6449	FSRQ	1.349	0.221	3	1,3,13
J1936.9−4720	294.2338	−47.3306	BLLAC	0.155	-	1	6
J1937.0+8354	294.4152	83.9414	UNCL	1.940	-	1	3
J1937.2−3958	294.3176	−39.9671	CLAGN	-	-	-	
J1937.2−4217	294.3873	−42.2551	UNCL	-	-	-	
J1939.5−1525	294.8611	−15.4286	FSRQ	1.765	-	1	3
J1939.8−4928	294.9420	−49.4273	UNCL	0.314	-	1	6
J1941.3−6210	295.3407	−62.1892	BLLAC	0.588	-	1	6
J1941.7+7218	295.3624	72.3617	UNCL	-	-	-	
J1942.5−5827	295.6028	−58.4735	UNCL	0.200	-	1	4
J1942.8−3512	295.7779	−35.1686	BLLAC	0.059	0.001	2	5,6
J1944.4−4523	296.0933	−45.3924	BLLAC	-	-	-	
J1944.9−2143	296.2299	−21.7220	BLLAC	0.247	0.071	2	4,6
J1945.1−4007	296.3310	−40.0990	UNCL	0.600	-	1	4
J1945.5−0153	296.3451	−1.8894	UNCL	1.041	-	1	3
J1946.0−3112	296.4974	−31.1940	BLLAC	-	-	-	

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J1949.5+7311	297.5726	73.1754	UNCL	-	-	-	
J1951.8−0511	297.9478	−5.1622	FSRQ	1.183	-	1	3
J1953.0+7651	298.4620	76.8472	UNCL	0.765	0.417	3	1,3,4
J1953.0−7025	298.2778	−70.4080	UNCL	0.200	-	1	4
J1954.6−1122	298.6715	−11.3896	BLLAC	1.296	-	1	3
J1954.9−5640	298.7619	−56.6747	BLLAC	0.208	0.010	2	4,6
J1955.1−1604	298.7528	−16.0608	BLLAC	0.651	0.674	3	3,4,6
J1955.4+5132	298.9281	51.5302	FSRQ	1.294	-	1	3
J1956.1+0234	299.1170	2.5737	UNCL	1.005	-	1	3
J1957.1−3231	299.2477	−32.4294	FSRQ	0.318	-	1	6
J1958.0−3845	299.4992	−38.7518	FSRQ	-	-	-	
J1958.1−0711	299.5083	−7.2293	UNCL	-	-	-	
J1958.3−3010	299.5621	−30.1866	BLLAC	0.095	0.011	2	5,6
J1959.1−4247	299.8053	−42.7688	FSRQ	-	-	-	
J1959.7−4725	299.9403	−47.4220	BLLAC	-	-	-	
J2000.0+6508	299.9994	65.1485	BLLAC	0.046	0.001	2	5,6
J2000.3−2930	300.0707	−29.5073	UNCL	1.366	-	1	3
J2000.6−1328	300.1756	−13.4260	FSRQ	0.214	0.083	4	3,5,6,11
J2000.9−1748	300.2379	−17.8160	FSRQ	1.763	-	1	3
J2001.5−0818	300.4177	−8.3367	UNCL	0.417	0.270	3	3,4,6
J2001.7+7040	300.3915	70.6738	BLLAC	0.869	-	1	3
J2001.9−5737	300.5174	−57.6126	UNCL	0.173	0.090	3	2,4,13
J2002.4−7119	300.6130	−71.3280	BLLAC	-	-	-	
J2002.6+6302	300.6891	63.0426	BLLAC	0.787	0.477	2	3,6
J2005.1+7003	301.2751	70.0776	UNCL	2.318	-	1	3
J2005.2−1822	301.3221	−18.3676	FSRQ	0.909	-	1	3
J2005.5+7752	301.3792	77.8787	BLLAC	0.735	-	1	3
J2005.8+6424	301.5737	64.4126	FSRQ	1.175	-	1	3
J2005.9−2309	301.4858	−23.1742	FSRQ	0.744	0.324	2	3,6
J2007.2+6607	301.8699	66.1229	FSRQ	1.306	-	1	3
J2007.3−7728	301.7769	−77.5117	UNCL	-	-	-	
J2007.9−4432	301.9799	−44.5790	MIS	0.279	-	1	6
J2009.4−4849	302.3558	−48.8316	BLLAC	0.034	-	1	6
J2010.0+0726	302.4813	7.4538	FSRQ	0.729	0.073	2	1,3
J2010.0+7229	302.4679	72.4887	BLLAC	0.950	0.764	2	3,6
J2011.6−1546	302.8155	−15.7778	FSRQ	1.318	-	1	3
J2012.2−1646	303.1257	−16.7807	UNCL	1.248	-	1	3
J2013.0−3717	303.2019	−37.3282	UNCL	0.600	-	1	4
J2014.3−0047	303.6193	−0.7897	BLLAC	0.274	0.168	3	3,5,6
J2014.5+0648	303.6295	6.8145	BLLAC	0.137	-	1	6
J2015.0+1621	303.7659	16.3743	UNCL	0.243	0.076	2	4,6
J2015.2−0137	303.8132	−1.6257	BLLAC	0.853	-	1	3
J2015.3−1432	303.8543	−14.5345	BLLAC	0.300	-	1	4
J2015.4+6556	303.9807	65.9146	FSRQ	1.266	-	1	3
J2016.3−0903	304.1002	−9.0593	BLLAC	-	-	-	

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2016.3−2331	303.9989	−23.5355	UNCL	-	-	-	
J2017.5−3753	304.3690	−37.8961	BLLAC	0.451	-	1	6
J2017.5−4113	304.3748	−41.2544	BLLAC	0.242	-	1	6
J2021.9+0629	305.4811	6.4871	BLLAC	0.473	0.353	2	3,6
J2022.0−7224	305.4328	−72.4366	UNCL	0.300	-	1	4
J2022.3−4513	305.6101	−45.2249	BLLAC	0.085	-	1	13
J2022.5+7612	305.6482	76.1906	BLLAC	0.867	-	1	3
J2023.6−0123	305.8867	−1.3950	BLLAC	0.625	0.434	2	3,4
J2023.6−1139	305.9029	−11.6662	BLLAC	0.767	-	1	11
J2023.8−4828	305.9109	−48.4479	UNCL	0.164	0.009	4	6,12a,12b,13
J2024.4−0847	306.1224	−8.8012	BLLAC	1.028	-	1	3
J2024.6−3252	306.1482	−32.8933	FSRQ	0.320	-	1	6
J2024.8−6459	306.1932	−64.9762	UNCL	0.624	0.131	4	2,4,6,13
J2025.2+0317	306.2901	3.2790	FSRQ	1.397	-	1	3
J2025.6−0735	306.4194	−7.5980	FSRQ	0.973	-	1	3
J2026.0−2845	306.4734	−28.7635	CLAGN	0.736	-	1	3
J2026.1+7645	306.6283	76.7467	UNCL	0.258	0.095	5	4,6,7,8,11
J2029.1−1839	307.2512	−18.6194	UNCL	0.760	0.614	2	3,4
J2030.2−0620	307.5631	−6.3708	SEY	0.644	0.039	3	11,12b,13
J2030.4−0502	307.5935	−5.0535	FSRQ	0.416	0.207	4	1,3,6,13
J2030.5−1439	307.6163	−14.6548	SEY	0.428	0.038	3	1,4,6
J2030.8−6959	307.4740	−69.9531	UNCL	-	-	-	
J2030.9+1935	307.7381	19.6036	BLLAC	0.235	0.086	2	4,6
J2031.1−2615	307.7679	−26.2588	UNCL	0.687	-	1	3
J2031.2−4121	307.7357	−41.3185	UNCL	0.456	0.062	4	6,12a,12b,13
J2031.8+1619	307.9254	16.3687	UNCL	0.149	0.042	2	6,11
J2032.0+1219	307.9791	12.3282	FSRQ	0.704	0.438	2	3,6
J2033.7+6308	308.4156	63.1445	UNCL	0.791	0.357	2	3,6
J2034.6+1154	308.6546	11.9087	FSRQ	0.200	0.101	2	5,6
J2034.8−4200	308.7129	−42.0107	BLLAC	0.213	0.097	5	2,4,6,12a,13
J2035.4+1056	308.8431	10.9352	FSRQ	-	-	-	
J2036.4+6553	309.0839	65.8874	BLLAC	1.066	-	1	3
J2036.9−3329	309.2062	−33.4752	BLLAC	0.296	-	1	6
J2037.9−0504	309.4130	−5.1394	UNCL	0.695	0.287	3	6,11,13
J2039.0−1046	309.7530	−10.7783	BLLAC	0.569	0.620	2	3,13
J2039.3+2150	309.8950	21.8694	UNCL	1.976	0.902	2	3,4
J2040.0−5737	310.0046	−57.5860	UNCL	0.802	0.266	3	2,12a,13
J2040.1−4621	310.0276	−46.3383	UNCL	0.193	0.076	5	4,6,12a,12b,13
J2040.2−2506	310.0366	−25.1296	FSRQ	1.583	-	1	3
J2040.2−7115	310.0345	−71.2500	AMB	0.119	0.022	2	5,6
J2040.5−1705	310.1156	−17.1175	UNCL	1.890	0.225	3	1,3,4
J2041.8−7319	310.5082	−73.3205	BLLAC	0.300	-	1	4
J2041.9−3735	310.4593	−37.5611	BLLAC	0.095	0.003	2	5,6
J2042.1+2427	310.5252	24.4479	BLLAC	0.083	0.032	3	5,6,11
J2042.7−0155	310.7029	−1.8194	UNCL	0.888	0.281	4	3,4,6,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2042.7−5415	310.6785	−54.1559	UNCL	1.518	0.909	2	2,13
J2043.7+0000	310.9257	0.0219	UNCL	0.337	0.139	3	1,4,13
J2044.0+1036	310.9652	10.5685	UNCL	0.259	-	1	6
J2045.1−2346	311.2405	−23.7790	UNCL	0.655	0.059	2	3,4
J2046.6−1012	311.7264	−10.1778	BLLAC	0.440	0.304	4	3,4,6,13
J2046.8−4258	311.6840	−42.9535	BLLAC	0.461	-	1	13
J2047.1−7400	311.7382	−74.0011	FSRQ	-	-	-	
J2047.9−3122	312.0258	−31.3378	UNCL	0.265	0.047	2	4,6
J2048.6−6804	312.1000	−68.0811	UNCL	0.166	-	1	6
J2049.0+1647	312.2625	16.7863	UNCL	0.686	0.394	3	1,3,4
J2049.7−0036	312.3406	−0.6574	BLLAC	0.209	0.017	3	6,12b,13
J2049.9+1002	312.4411	10.0540	BLLAC	-	-	-	
J2049.9−2453	312.5480	−24.8033	UNCL	0.331	0.092	2	4,6
J2050.0+0408	312.5260	4.1302	BLLAC	0.434	0.275	3	1,3,13
J2050.4−2627	312.6029	−26.4717	FSRQ	1.109	-	1	3
J2052.2−5533	313.0570	−55.5528	FSRQ	0.507	0.076	2	2,13
J2052.5+0810	313.1779	8.1772	BLLAC	-	-	-	
J2054.8+0015	313.7369	0.2605	BLLAC	0.127	0.026	7	5,6,7,8,11,12b,13
J2055.4−0020	313.8676	−0.3548	BLLAC	0.258	0.119	2	3,13
J2055.4−0504	313.8474	−5.1053	BLLAC	0.209	0.024	6	3,6,7,8,12b,13
J2056.2−4714	314.0682	−47.2466	FSRQ	0.449	0.469	2	2,13
J2056.4−4904	314.0566	−49.0706	UNCL	0.446	0.175	4	2,4,6,13
J2056.5−0202	314.1590	−2.0858	UNCL	1.120	0.412	4	1,3,4,13
J2056.7−3209	314.1045	−32.1466	BLLAC	-	-	-	
J2057.4−0723	314.3377	−7.3277	UNCL	1.153	0.641	4	1,3,4,13
J2058.8−1442	314.6948	−14.7181	BLLAC	0.068	0.016	3	5,6,11
J2100.0+2103	315.0211	20.9890	AMB	0.650	0.522	2	3,6
J2101.3+0912	315.3495	9.2236	UNCL	0.205	0.127	2	4,13
J2101.4−2935	315.2569	−29.5577	FSRQ	1.299	-	1	3
J2103.4−7816	316.4375	−78.4264	BLLAC	0.892	0.411	2	4,6
J2103.7−1112	315.9450	−11.2264	UNCL	-	-	-	
J2103.8−6233	315.9100	−62.5405	BLLAC	0.176	0.166	2	2,13
J2104.0−3546	315.9706	−35.7723	UNCL	0.500	-	1	4
J2104.3−0212	316.0914	−2.2108	BLLAC	1.376	1.682	2	3,13
J2104.7+0108	316.1788	1.1363	UNCL	0.672	0.156	4	1,3,4,13
J2105.2−5143	316.3536	−51.7639	UNCL	0.449	0.132	4	2,6,12a,13
J2106.9+2455	316.6657	25.0160	UNCL	0.644	0.245	3	3,4,6
J2107.6−4148	316.8466	−41.7583	UNCL	0.694	0.075	2	2,13
J2108.2−2454	317.0513	−24.8759	UNCL	1.173	0.036	2	3,4
J2108.3−4824	316.9354	−48.4675	BLLAC	0.534	0.202	3	2,4,13
J2108.5+1434	317.1710	14.5075	FSRQ	1.002	0.664	3	3,6,13
J2108.7−0250	317.1864	−2.8428	BLLAC	0.076	0.025	8	5,6,7,8,9,11,12b,13
J2108.9−6638	317.2159	−66.6230	BLLAC	-	-	-	
J2109.6+0440	317.4172	4.6668	BLLAC	0.276	0.192	2	1,13
J2109.8−8618	317.5466	−86.3132	UNCL	0.395	0.126	2	4,6

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2110.2−1021c	317.5041	−10.3493	FSRQ	1.294	1.135	4	3,4,6,13
J2110.3+0808	317.5403	8.1654	FSRQ	1.113	0.310	3	1,3,13
J2112.7+0819	318.1792	8.3098	BLLAC	0.393	0.248	3	3,4,13
J2114.7+3130	318.7102	31.5059	UNCL	0.950	-	1	11
J2114.8+2026	318.7204	20.4408	UNCL	0.211	0.032	6	3,4,6,7,8,11
J2114.8+2831	318.7431	28.5492	FSRQ	2.318	-	1	3
J2115.4+2932	318.8726	29.5607	FSRQ	1.064	-	1	3
J2115.6−4938	318.9371	−49.6519	UNCL	0.285	-	1	6
J2115.8+6753	319.0741	67.8900	UNCL	0.409	0.011	2	4,11
J2115.9−0113	319.0135	−1.1412	BLLAC	0.166	0.084	8	2,3,6,8,11,12a,12b,13
J2116.2+3339	319.0605	33.6557	BLLAC	-	-	-	
J2116.3+1015	318.9601	10.2590	UNCL	1.012	-	1	13
J2117.8−1521	319.4648	−15.3783	UNCL	2.300	-	1	4
J2117.8−3243	319.4788	−32.7245	BLLAC	0.204	0.002	2	5,6
J2118.0+0019	319.5725	0.2213	SEY	0.584	0.167	4	1,2,3,13
J2118.8−0723c	319.7207	−7.5410	SEY	0.203	0.040	5	3,6,9,12b,13
J2119.0−3317	319.7219	−33.2808	UNCL	-	-	-	
J2119.6−1105	319.9162	−11.1041	FSRQ	1.051	0.250	2	3,13
J2120.6−1254	320.1486	−12.9114	SEY	0.484	0.066	4	6,11,12b,13
J2120.6−6114	320.2670	−61.1902	FSRQ	0.516	0.646	2	2,13
J2121.0+1901	320.2525	19.0245	FSRQ	1.233	0.261	3	1,3,13
J2123.6+0535	320.9355	5.5895	FSRQ	0.730	0.338	2	3,13
J2123.8−3148	320.9367	−31.9338	UNCL	-	-	-	
J2126.1−3922	321.6050	−39.3562	BLLAC	0.500	-	1	4
J2126.3−4605	321.6279	−46.0966	UNCL	0.612	0.784	2	2,13
J2126.5+1842	321.6186	18.6837	UNCL	0.851	0.540	3	3,4,13
J2127.6−5959	321.8743	−60.0175	AMB	0.928	1.448	3	4,12a,13
J2127.7+3612	321.9293	36.2183	BLLAC	0.590	0.541	2	3,6
J2130.2−7320	322.6609	−73.4178	BLLAC	0.044	0.000	2	5,6
J2130.4−4241	322.5684	−42.7287	UNCL	0.148	0.007	5	5,6,12a,12b,13
J2130.8−6623	322.6613	−66.3990	UNCL	-	-	-	
J2131.0−2746	322.7635	−27.7828	BLLAC	-	-	-	
J2131.5−0916	322.8976	−9.2566	BLLAC	0.693	0.786	3	3,6,13
J2131.7−2515	322.9648	−25.2663	BLLAC	-	-	-	
J2132.0−5418	323.0346	−54.3435	UNCL	0.705	0.273	2	2,13
J2133.0+2610	323.2210	26.1955	UNCL	1.115	0.026	2	1,3
J2133.1+2529c	323.3098	25.4831	BLLAC	0.207	0.050	4	3,6,7,8
J2133.6+1439	323.4058	14.7296	UNCL	0.676	0.457	4	3,4,6,13
J2133.9+6646	323.4548	66.7846	UNCL	0.699	0.483	2	3,6
J2134.2−0154	323.5430	−1.8881	CLAGN	0.427	0.449	2	3,13
J2134.3−6511	323.5551	−65.2270	UNCL	0.632	0.177	2	2,13
J2134.5−2130	323.6257	−21.5091	BLLAC	0.501	0.398	2	3,6
J2135.3−5006	323.8340	−50.1144	FSRQ	1.516	0.846	2	2,13
J2136.2+0032	324.1608	0.6984	FSRQ	1.268	0.837	3	2,3,13
J2136.2−0642	324.0930	−6.7311	FSRQ	0.780	0.433	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2138.3+3556	324.5281	35.9082	UNCL	0.629	0.439	2	3,4
J2138.8−2055	324.7198	−20.8966	BLLAC	0.547	0.299	2	3,6
J2139.2−2214	324.8113	−22.2196	UNCL	1.437	0.716	2	3,4
J2139.4−4235	324.8507	−42.5890	BLLAC	0.468	0.624	3	2,12a,13
J2139.9+3910	325.0706	39.1958	UNCL	-	-	-	
J2140.5−6731	324.8050	−67.5355	FSRQ	-	-	-	
J2141.7−6410	325.4435	−64.1874	FSRQ	0.416	0.347	3	2,6,13
J2141.8−3727	325.4685	−37.4869	FSRQ	-	-	-	
J2142.4+3659	325.6104	36.9971	UNCL	0.156	0.058	2	4,6
J2142.5−2552	325.5664	−25.8574	UNCL	1.367	-	1	3
J2142.7−0437	325.6538	−4.6288	FSRQ	0.161	0.031	3	3,6,13
J2142.8+1958	325.6979	19.9697	UNCL	0.760	0.814	4	1,4,6,13
J2143.0−5501	325.4346	−55.1583	FSRQ	0.152	0.015	3	2,6,13
J2143.1−3929	325.7619	−39.4903	BLLAC	0.279	0.162	2	6,13
J2143.5+1743	325.8981	17.7302	FSRQ	0.222	0.185	3	3,6,13
J2143.9+3337	325.9589	33.6197	UNCL	-	-	-	
J2144.2+3132	326.0634	31.5609	BLLAC	0.623	-	1	3
J2144.3−7802	326.6253	−77.9319	FSRQ	0.321	-	1	6
J2144.8−1817	326.1754	−18.3001	UNCL	0.159	0.029	3	4,6,11
J2145.0−3356	326.2547	−33.9546	FSRQ	-	-	-	
J2145.5+1006	326.3758	10.1015	BLLAC	0.499	0.108	4	1,3,4,13
J2145.7+0718	326.4679	7.3242	BLLAC	0.183	0.045	6	6,7,8,9,12b,13
J2146.4−1528	326.5957	−15.4289	FSRQ	0.850	-	1	3
J2146.5−1344	326.6540	−13.7335	BLLAC	0.481	0.496	2	3,13
J2146.8+0425	326.7300	4.4571	UNCL	1.181	0.577	5	1,3,4,6,13
J2147.1+0931	326.7923	9.4963	FSRQ	0.462	0.419	2	3,13
J2147.3−7536	326.8030	−75.6037	FSRQ	-	-	-	
J2148.0−0733	327.0294	−7.5630	AMB	0.303	0.149	3	1,6,13
J2148.6+0652	327.0227	6.9607	FSRQ	0.559	0.713	2	3,13
J2148.9−0121	327.1808	−1.3773	SEY	0.184	0.015	9	5,6,7,8,9,11,12a,12b,13
J2149.6+0323	327.4245	3.3810	BLLAC	0.364	0.345	2	3,13
J2149.7+1917	327.4469	19.3462	UNCL	1.347	0.592	3	1,3,13
J2150.1−1410	327.5647	−14.1805	BLLAC	0.146	0.030	5	5,6,11,12b,13
J2150.7−1750	327.6942	−17.8317	BLLAC	0.192	-	1	6
J2150.7−2810	327.7212	−28.2116	FSRQ	0.854	-	1	3
J2150.8+1118	327.7158	11.3211	BLLAC	0.326	0.097	3	1,6,13
J2151.7−2749	327.8415	−27.7065	FSRQ	0.933	-	1	3
J2151.8−3027	327.9813	−30.4649	FSRQ	-	-	-	
J2152.0−1205	328.0588	−12.0949	BLLAC	0.641	0.694	2	3,13
J2152.5+1737	328.1034	17.5772	BLLAC	0.626	0.269	3	1,3,13
J2153.1−0041	328.2723	−0.7085	BLLAC	0.177	0.039	6	2,6,8,12a,12b,13
J2153.8−1137	328.4593	−11.6039	UNCL	0.703	0.258	3	3,6,13
J2156.0+1818	329.0068	18.3103	BLLAC	1.359	1.672	2	3,13
J2156.0−6942	329.2749	−69.6899	MIS	0.017	-	1	5
J2156.3−0036	329.0615	−0.6179	BLLAC	0.852	0.308	4	1,2,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2156.9−0854	329.2097	−8.9265	BLLAC	0.577	0.354	3	1,3,13
J2157.5+3127	329.3701	31.4504	FSRQ	0.842	-	1	3
J2158.1−1501	329.5262	−15.0193	CLAGN	0.484	0.514	2	3,13
J2158.8−3013	329.7169	−30.2256	BLLAC	0.030	-	1	6
J2159.1−2840	329.7955	−28.6879	BLLAC	0.185	-	1	6
J2159.8−4751	329.9963	−47.8665	UNCL	0.582	0.509	2	2,13
J2200.1+2138	330.0592	21.6325	BLLAC	0.470	0.303	3	1,3,13
J2200.3+1029	330.0331	10.5022	BLLAC	0.845	0.266	3	1,3,13
J2200.7−2414	330.1528	−24.2410	UNCL	0.620	0.294	2	3,4
J2201.0−5907	330.2805	−59.1113	UNCL	0.122	0.046	5	4,5,6,12a,13
J2201.5+2950	330.3492	29.8263	BLLAC	0.118	0.033	2	6,11
J2201.5−8339	330.5802	−83.6366	FSRQ	-	-	-	
J2201.9−1706	330.4826	−17.1168	BLLAC	0.145	0.013	3	5,6,11
J2202.7+4216	330.6804	42.2778	BLLAC	0.067	-	1	6
J2202.7−5637	330.7221	−56.5953	MIS	0.058	0.012	4	5,6,12a,13
J2203.4+1725	330.8621	17.4301	FSRQ	0.762	0.396	3	3,6,13
J2204.3+0438	331.0736	4.6672	SEY	0.029	0.005	5	5,6,9,11,13
J2204.5+3634	331.0879	36.5436	BLLAC	0.068	0.002	3	5,6,11
J2205.0+7432	331.4474	74.6059	UNCL	1.382	-	1	3
J2206.8−0032	331.6803	−0.5174	BLLAC	0.837	0.237	4	1,2,3,13
J2207.0+3607	331.7854	36.1597	UNCL	-	-	-	
J2207.1+4316	331.7897	43.2743	UNCL	1.645	-	1	3
J2207.5−5346	331.9322	−53.7761	FSRQ	0.634	0.821	2	2,13
J2207.6+0053	331.9085	0.8758	CLAGN	1.170	0.740	4	1,2,3,13
J2208.1−4507	332.0368	−45.1554	UNCL	0.524	0.346	2	6,13
J2209.4+4329	332.3646	43.4803	UNCL	0.618	0.305	3	1,3,6
J2209.7−0451	332.4237	−4.8529	BLLAC	0.310	0.123	4	1,3,6,13
J2209.8−5028	332.5667	−50.5182	UNCL	0.900	0.866	2	2,13
J2210.8+3203	332.7439	32.0614	UNCL	0.220	0.057	3	4,6,11
J2211.0−0003	332.7848	−0.0507	BLLAC	0.278	0.088	5	2,7,8,9,13
J2211.2−1325	332.8504	−13.4694	FSRQ	0.436	0.540	2	3,13
J2211.4−7040	332.9843	−70.6541	UNCL	0.200	-	1	4
J2212.0+2356	333.0249	23.9279	CLAGN	0.759	0.196	3	1,3,13
J2212.2−7251	332.8471	−72.8187	UNCL	0.280	-	1	6
J2212.6+2800	333.1629	27.9940	BLLAC	0.499	0.204	4	1,3,6,13
J2212.8+0647	333.2118	6.7691	FSRQ	0.972	0.206	3	1,3,13
J2212.9−2526	333.2604	−25.4917	FSRQ	0.728	0.384	2	3,6
J2213.5−4754	333.3765	−47.9070	BLLAC	0.378	0.104	2	2,13
J2216.8+3103	334.1780	31.0432	FSRQ	1.462	0.690	2	1,13
J2216.9+2421	334.2534	24.3628	BLLAC	0.517	0.221	3	3,6,13
J2218.6+1941	334.7274	19.6448	UNCL	0.690	0.344	6	3,4,7,8,9,13
J2219.2+1806	334.8087	18.1099	FSRQ	1.177	0.258	2	3,13
J2219.2−0342	334.7168	−3.5936	FSRQ	1.355	1.731	2	3,13
J2220.5+2813	335.1197	28.2321	BLLAC	0.128	0.035	8	5,6,7,8,9,11,12b,13
J2221.5−5225	335.3721	−52.4244	BLLAC	0.748	0.921	3	2,6,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2221.9−3504	335.6128	−35.1639	UNCL	-	-	-	
J2222.8+1209	335.7208	12.2305	FSRQ	0.849	0.280	3	1,3,13
J2223.3+0102	335.8732	1.0407	BLLAC	0.616	0.306	4	1,2,3,13
J2224.0−1127	336.0332	−11.4392	BLLAC	0.748	0.149	2	3,13
J2224.3+7737	336.8401	77.5553	UNCL	0.100	-	1	4
J2224.5+0353	336.1041	3.9162	SEY	0.481	0.346	5	1,3,4,12b,13
J2225.5−1114	336.4322	−11.2280	BLLAC	0.736	0.464	2	3,13
J2225.6+2120	336.4085	21.3018	FSRQ	1.141	1.412	2	3,13
J2225.7−0457	336.4469	−4.9504	CLAGN	0.401	0.330	2	3,13
J2226.6+0210	336.6518	2.1770	BLLAC	0.313	0.110	8	4,6,7,8,9,12b,12c,13
J2226.8+0051	336.6939	0.8698	FSRQ	0.791	0.279	7	2,3,6,7,8,9,13
J2227.9+0036	336.9922	0.6182	BLLAC	0.503	0.493	3	2,3,13
J2227.9−3031	336.9610	−30.5621	MIS	0.074	0.003	2	5,6
J2228.0−4155	336.9967	−41.9524	BLLAC	-	-	-	
J2228.6−1636	337.1258	−16.6120	BLLAC	0.888	-	1	3
J2229.1+2254	337.3096	22.9194	BLLAC	0.449	0.024	8	4,6,7,8,9,11,12b,13
J2229.2−6911	337.2507	−69.1751	FSRQ	-	-	-	
J2229.7−0832	337.4170	−8.5485	FSRQ	0.554	0.568	2	3,13
J2230.9−7815	337.6273	−78.2657	FSRQ	-	-	-	
J2231.0−4416	337.7352	−44.2750	FSRQ	0.440	0.053	2	2,13
J2232.6+1143	338.1517	11.7308	FSRQ	0.614	0.656	2	3,13
J2232.6−2023	338.2033	−20.3739	BLLAC	-	-	-	
J2232.8+1334	338.2547	13.6006	BLLAC	0.173	0.047	7	6,7,8,9,11,12b,13
J2233.9−1229	338.4789	−12.5095	UNCL	0.181	0.017	5	5,6,11,12b,13
J2234.1−2656	338.5350	−26.9457	UNCL	0.252	-	1	3
J2235.1−0623	338.7629	−6.3836	UNCL	0.520	0.162	7	3,4,6,7,8,9,13
J2235.3−4836	338.8052	−48.5997	FSRQ	0.328	0.334	3	2,12a,13
J2235.8−3627	338.9785	−36.4841	BLLAC	0.442	-	1	6
J2236.2−1706	339.0397	−17.1061	BLLAC	0.487	0.256	2	3,6
J2236.3+2828	339.0936	28.4826	CLAGN	0.913	1.040	2	3,13
J2236.4−2309	339.1093	−23.1574	UNCL	-	-	-	
J2236.5−1433	339.1420	−14.5562	BLLAC	1.516	-	1	3
J2236.6+3706	339.1098	37.1204	BLLAC	0.161	0.034	5	5,6,7,8,11
J2237.0−3921	339.2838	−39.3606	FSRQ	0.300	0.013	3	6,12b,13
J2239.2−5657	339.8003	−57.0169	FSRQ	1.241	0.346	2	2,13
J2240.3−1246	340.0630	−12.7941	UNCL	0.167	0.040	4	6,11,12b,13
J2240.7−4746	340.1754	−47.7927	UNCL	0.134	-	1	5
J2241.1−4122	340.2613	−41.3653	UNCL	1.150	-	1	13
J2241.2+4120	340.2800	41.3366	BLLAC	0.726	-	1	3
J2241.3+2943	340.3481	29.7132	BLLAC	0.400	0.127	4	1,4,6,13
J2243.4−2544	340.8600	−25.7419	BLLAC	1.044	-	1	3
J2243.5−3931	340.8587	−39.5647	UNCL	1.202	-	1	13
J2243.7−1231	340.9181	−12.5166	BLLAC	0.213	-	1	13
J2243.8−2510	340.9182	−25.0998	UNCL	1.623	0.903	2	3,4
J2243.9+2021	340.9781	20.3510	BLLAC	0.028	-	1	13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2244.2+4057	341.0530	40.9538	FSRQ	0.752	0.298	2	3,6
J2244.9−0007	341.2004	−0.1054	BLLAC	0.818	0.716	5	1,2,3,12c,13
J2245.5−1734	341.3830	−17.5661	UNCL	0.653	0.323	3	1,3,4
J2245.9+1544	341.5208	15.7432	BLLAC	0.404	0.167	3	1,3,13
J2246.7−5207	341.6754	−52.1112	BLLAC	0.133	0.039	4	6,12a,12b,13
J2247.4−0001	341.8758	0.0018	BLLAC	0.639	0.369	4	1,2,3,13
J2247.5−3700	341.7659	−36.9629	FSRQ	-	-	-	
J2247.8+4413	341.9717	44.2209	BLLAC	1.899	-	1	3
J2248.7−3235	342.1612	−32.5978	FSRQ	-	-	-	
J2248.9+2106	342.2524	21.1175	FSRQ	1.224	0.683	3	1,3,13
J2249.4−1300	342.2946	−13.0006	BLLAC	0.259	0.174	3	4,6,13
J2249.7−5944	342.4102	−59.7397	UNCL	0.242	0.091	6	2,4,6,12a,12b,13
J2249.9+0452	342.5306	4.9382	UNCL	0.763	0.080	7	3,7,8,9,12b,12c,13
J2250.0+3825	342.5240	38.4103	BLLAC	0.075	0.010	2	5,6
J2250.0−1250	342.4984	−12.8547	UNCL	0.600	0.761	2	3,13
J2250.4+1748	342.6365	17.8208	BLLAC	0.278	0.053	7	6,7,8,9,11,12b,13
J2250.4−4206	342.5926	−42.1037	UNCL	0.290	0.214	2	2,13
J2250.7−2806	342.6854	−28.1109	BLLAC	1.642	-	1	3
J2251.5−4928	342.8696	−49.4864	UNCL	0.143	0.010	2	2,13
J2251.7−3208	342.9480	−32.1036	BLLAC	-	-	-	
J2252.0+4031	342.9990	40.5162	BLLAC	0.135	-	1	6
J2252.6+1245	343.1341	12.7530	BLLAC	0.345	0.149	3	1,3,13
J2253.2−1232	343.3449	−12.5315	UNCL	0.822	-	1	13
J2253.3+3233	343.3021	32.6012	FSRQ	0.263	0.090	3	3,6,13
J2253.7+1405	343.4760	14.0769	BLLAC	0.191	0.052	6	6,7,8,9,12b,13
J2253.9+1609	343.4906	16.1482	FSRQ	0.579	0.740	2	3,13
J2254.2+4305	343.4840	43.0754	UNCL	0.106	0.007	2	4,11
J2254.8−2725	343.7217	−27.4191	BLLAC	0.248	0.021	2	3,6
J2255.2+2411	343.8141	24.1698	BLLAC	0.547	0.700	2	3,13
J2256.0−2740	344.0006	−27.5989	FSRQ	1.821	-	1	3
J2256.4−7119	344.0368	−71.2607	UNCL	-	-	-	
J2256.6−2011	344.1717	−20.1946	BLLAC	0.858	-	1	3
J2256.7+1307	344.1011	13.0949	BLLAC	0.513	0.216	4	1,3,6,13
J2257.5+0748	344.3221	7.7201	BLLAC	0.165	0.091	4	3,6,11,13
J2258.1−2759	344.5248	−27.9726	FSRQ	0.808	-	1	3
J2258.3−3643	344.5626	−36.7429	BLLAC	0.319	-	1	6
J2258.4−5524	344.5791	−55.4271	BLLAC	0.196	0.079	3	2,6,13
J2258.5−8247	344.4975	−82.7814	UNCL	0.252	0.064	2	4,6
J2259.7−3549	344.9243	−35.8130	UNCL	-	-	-	
J2259.8−1552	344.9886	−15.8926	UNCL	1.625	0.634	2	3,4
J2300.1+4053	345.0515	40.8736	BLLAC	0.238	0.083	2	4,6
J2300.3+3136	345.0952	31.6179	BLLAC	0.502	0.518	2	3,13
J2300.7−2645	345.1063	−26.7397	FSRQ	1.235	-	1	3
J2300.9+7108	345.2093	71.1705	UNCL	1.747	-	1	3
J2301.0−0158	345.2832	−1.9679	FSRQ	0.648	0.196	3	1,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2302.8−1841	345.7624	−18.6905	MIS	0.289	0.187	3	3,5,6
J2304.3+0618	346.1179	6.3356	FSRQ	0.776	0.532	4	1,3,6,13
J2304.6+3704	346.1530	37.0854	BLLAC	-	-	-	
J2306.6−1105	346.6479	−11.0637	UNCL	0.640	0.044	3	11,12b,13
J2307.4−1206	346.8421	−12.0882	BLLAC	0.681	0.222	2	3,13
J2307.6+1451	346.8917	14.8383	BLLAC	0.555	0.168	4	1,3,6,13
J2308.9+1111	347.2159	11.1971	UNCL	0.824	0.469	3	3,4,13
J2309.7−3632	347.4202	−36.5469	BLLAC	-	-	-	
J2311.0+0205	347.7554	2.0848	BLLAC	0.497	0.355	3	2,3,13
J2311.0+3425	347.7722	34.4197	FSRQ	0.604	0.225	2	1,3
J2311.7+2604	347.9412	26.0799	FSRQ	0.791	0.392	3	1,3,13
J2311.8+4541	347.9475	45.7322	FSRQ	1.529	-	1	3
J2312.5+7241	348.0821	72.6908	UNCL	2.024	-	1	3
J2313.4−6922	348.4495	−69.3919	UNCL	0.500	-	1	4
J2313.5+3945	348.3514	39.8305	UNCL	1.195	0.406	2	3,4
J2313.9−4501	348.5391	−44.9303	FSRQ	1.056	0.658	2	2,13
J2314.0+1445	348.4889	14.7398	BLLAC	0.124	0.018	8	5,6,7,8,9,11,12b,13
J2315.6−5018	348.9347	−50.3110	BLLAC	1.144	0.788	3	2,6,13
J2316.9−5210	349.2572	−52.1671	BLLAC	0.247	0.075	3	2,4,13
J2317.0+3756	349.2928	37.9967	UNCL	1.105	-	1	3
J2317.4−4533	349.3833	−45.5666	BLLAC	0.150	-	1	13
J2318.2+1915	349.5955	19.2478	FSRQ	1.353	0.608	2	1,13
J2319.1−4207	349.7746	−42.1134	BLLAC	0.043	0.015	5	5,6,12a,12b,13
J2319.7+1609	349.9310	16.1973	BLLAC	0.152	0.017	2	6,13
J2320.8−0823	350.3260	−8.4560	FSRQ	1.950	1.504	2	1,13
J2321.0−6308	350.1660	−63.1550	BLLAC	0.175	0.035	3	2,4,13
J2321.5−1619	350.4042	−16.3246	BLLAC	-	-	-	
J2321.7−6438	350.4259	−64.6353	BLLAC	0.170	0.107	2	2,13
J2321.9+2734	350.4994	27.5462	FSRQ	0.503	0.454	3	3,6,13
J2321.9+3204	350.4790	32.0688	FSRQ	0.903	0.391	3	3,6,13
J2322.1+4440	350.5848	44.7618	BLLAC	1.227	-	1	3
J2322.6−0735	350.7170	−7.6182	UNCL	0.686	0.358	4	1,3,4,13
J2322.7+3436	350.6834	34.6039	BLLAC	0.070	0.015	8	5,6,7,8,9,11,12b,13
J2322.8−4916	350.7268	−49.2750	BLLAC	0.372	0.371	2	2,13
J2323.5−0317	350.8831	−3.2847	FSRQ	0.568	0.325	3	1,3,13
J2323.6−0617	350.9130	−6.2998	FSRQ	1.267	0.723	4	1,3,12b,13
J2323.8+4210	350.9670	42.1829	BLLAC	-	-	-	
J2324.7+0801	351.1889	8.0350	BLLAC	0.650	0.827	2	3,13
J2324.7−4041	351.1861	−40.6804	BLLAC	0.173	0.091	3	2,6,13
J2325.2+3957	351.3245	39.9601	BLLAC	0.936	-	1	3
J2325.4−3559	351.3692	−35.9651	AMB	0.174	-	1	6
J2325.4−4800	351.3620	−48.0048	BLLAC	0.124	0.023	4	2,6,12a,13
J2325.6+1644	351.4088	16.7785	BLLAC	0.356	0.269	2	3,13
J2325.7+1821	351.4498	18.3699	UNCL	0.413	0.185	8	3,4,6,7,8,9,12b,13
J2326.2+0113	351.6068	1.2024	FSRQ	0.648	0.291	4	1,2,3,13

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2326.9−0201	351.7241	−2.0372	MIS	0.161	0.014	8	5,6,7,8,9,11,12b,13
J2327.4+0444	351.8906	4.7951	UNCL	0.254	0.061	8	3,4,6,7,8,9,12b,13
J2327.5+0939	351.8899	9.6693	FSRQ	0.717	0.796	2	3,13
J2328.3−4036	352.0803	−40.5861	FSRQ	0.146	-	1	13
J2329.0+0832	352.2741	8.5711	FSRQ	0.751	0.139	3	1,3,13
J2329.2+3755	352.3094	37.9040	BLLAC	1.363	-	1	3
J2329.3−4733	352.3238	−47.5053	FSRQ	0.642	0.810	2	2,13
J2329.3−4955	352.3370	−49.9280	FSRQ	0.755	-	1	13
J2329.7−2118	352.4234	−21.2957	MIS	0.025	0.008	3	5,6,11
J2330.3−2332	352.5674	−23.6115	UNCL	1.191	1.189	2	3,4
J2330.5+1102	352.6702	11.0052	FSRQ	1.178	0.399	3	1,3,13
J2330.6−3726	352.6491	−37.4105	BLLAC	0.195	0.001	2	5,6
J2331.0−2147	352.7668	−21.8042	FSRQ	1.139	-	1	3
J2331.1−1653	352.7311	−16.9443	UNCL	1.282	0.109	2	3,4
J2331.3−1558	352.9111	−15.9492	FSRQ	1.225	-	1	3
J2331.5−0258	352.8040	−3.0251	UNCL	0.560	0.266	4	1,3,4,13
J2332.1−4118	353.0794	−41.3104	FSRQ	0.344	0.275	2	2,13
J2333.4−0133	353.3195	−1.5187	FSRQ	0.923	0.399	4	1,2,3,13
J2334.2+0736	353.5535	7.6077	FSRQ	0.899	1.071	2	3,13
J2334.8+1432	353.7243	14.5374	BLLAC	0.877	0.570	3	1,3,13
J2334.9−2346	353.4802	−23.7280	CLAGN	0.041	0.017	4	3,5,6,11
J2335.4−0128	353.8351	−1.5193	FSRQ	0.682	0.495	4	1,2,3,13
J2336.5−7622	354.1150	−76.3439	UNCL	0.147	-	1	6
J2336.6+2356	354.1754	23.9248	MIS	0.068	0.018	8	5,6,7,8,9,11,12b,13
J2336.6−4115	354.1416	−41.2561	FSRQ	0.715	0.153	2	2,13
J2336.9−5859	354.3617	−59.0205	UNCL	0.672	0.430	2	2,13
J2338.0−0230	354.4889	−2.5160	FSRQ	0.590	0.140	3	1,3,13
J2338.1+0325	354.5319	3.4469	CLAGN	0.268	0.092	3	3,12b,13
J2338.9+2124	354.7349	21.4115	BLLAC	0.650	0.693	2	3,13
J2339.2−7403	354.8370	−74.0766	BLLAC	0.139	0.021	2	5,6
J2339.3−2656	354.8239	−26.9442	UNCL	1.407	-	1	3
J2339.6+0242	354.8738	2.7348	FSRQ	0.807	0.177	2	1,13
J2340.5+3854	355.1786	38.9199	UNCL	0.293	0.143	2	4,6
J2340.8+8015	355.2260	80.2544	BLLAC	0.157	-	1	6
J2341.8−2917	355.3740	−29.3208	MIS	0.029	0.008	3	5,6,11
J2343.6+3438	355.8899	34.6642	BLLAC	0.238	0.082	4	6,7,8,9
J2343.7−5624	355.8629	−56.4400	MIS	0.628	0.439	3	2,6,13
J2343.9+0546	355.9835	5.7841	BLLAC	0.131	0.011	2	9,13
J2345.2−1555	356.3019	−15.9188	CLAGN	1.712	-	1	3
J2346.7+0705	356.6664	7.0852	BLLAC	0.077	0.012	4	5,6,9,13
J2346.7+8008	356.6067	80.1320	BLLAC	-	-	-	
J2348.0−1630	357.0109	−16.5200	FSRQ	1.167	-	1	3
J2348.1−4934	357.3556	−49.5407	UNCL	0.185	0.027	5	2,6,12a,12b,13
J2348.3−6049	357.1084	−60.8222	UNCL	0.708	0.143	2	2,13
J2349.2+4535	357.3376	45.5945	BLLAC	0.819	0.159	2	3,4

Table A2. *Cont.*

4FGL Name	RA	DEC	R-Class	$<z_{ph}>$	σ	N	References
J2349.4+0534	357.3377	5.5777	CLAGN	0.466	0.313	5	3,7,8,9,13
J2350.6−3005	357.6429	−30.1012	BLLAC	0.134	0.052	2	6,11
J2350.9−1416	357.7963	−14.2664	BLLAC	0.127	0.009	5	5,6,11,12b,13
J2351.3−7559	357.8172	−76.0043	UNCL	0.245	0.073	2	4,6
J2352.0+1750	358.0243	17.8205	BLLAC	0.448	0.431	2	3,13
J2352.9+3031	358.2279	30.5060	FSRQ	0.871	0.506	3	1,3,13
J2353.1−4806	358.2963	−48.1012	UNCL	0.250	0.070	3	2,4,13
J2353.5−1457	358.3379	−14.9825	UNCL	0.624	0.165	2	3,4
J2353.7−3037	358.4477	−30.6301	BLLAC	-	-	-	
J2353.8−3911	358.4292	−39.2456	UNCL	0.447	0.097	3	2,12a,13
J2354.1+2720	358.5092	27.3910	UNCL	0.722	0.293	3	1,3,13
J2354.1−0958	358.5231	−9.9636	AMB	1.003	0.116	2	1,13
J2354.6+4554	358.5903	45.8845	FSRQ	0.833	0.599	2	3,6
J2354.9+8151	359.0950	81.8812	FSRQ	-	-	-	
J2355.7−3351	358.9110	−33.8741	UNCL	0.900	-	1	4
J2356.2+4036	359.0531	40.6131	BLLAC	0.094	0.005	3	5,6,11
J2357.0−4840	359.3376	−48.6384	UNCL	0.554	0.139	2	2,13
J2357.4−0152	359.3547	−1.8710	BLLAC	0.469	0.322	4	1,2,3,13
J2357.4−1718	359.3749	−17.3009	BLLAC	2.331	-	1	3
J2357.8−5311	359.4719	−53.1871	FSRQ	0.551	0.201	2	2,13
J2358.0−4601	359.5089	−45.9219	FSRQ	0.488	0.318	2	2,13
J2358.1−2853	359.5707	−28.8928	UNCL	0.891	0.256	2	3,4
J2358.3+3830	359.6049	38.4824	SEY	0.186	0.019	2	4,6
J2358.3−1021	359.5453	−10.3357	FSRQ	0.967	0.624	3	1,3,13
J2358.5−1808	359.6535	−18.1215	BLLAC	1.174	-	1	3
J2359.0+3922	359.7494	39.3745	FSRQ	1.131	-	1	3
J2359.0−3038	359.7829	−30.6280	BLLAC	0.133	-	1	6
J2359.3+0215	359.8210	2.2556	BLLAC	0.877	0.461	5	1,2,3,6,13
J2359.3−2049	359.8314	−20.7989	BLLAC	0.093	0.024	3	5,6,11
J2359.9−3736	0.0351	−37.6391	UNCL	0.257	0.004	4	6,12a,12b,13

Notes

1 The original sample from 4FGL-DR2 consisted of 2982 point sources [18], but we updated it to 2980 when the DR3 was released, because J1242.4 − 2948 has no longer a counterpart and J2055.8 + 1545 is now associated with a millisecond pulsar. We did not include new sources added in the DR3. Hereinafter reference is always made to DR2, unless otherwise specified.

2 http://simbad.u-strasbg.fr/simbad/ (accessed on 30 August 2022).

3 http://ned.ipac.caltech.edu/ (accessed on 30 August 2022).

4 https://ui.adsabs.harvard.edu/ (accessed on 30 August 2022).

5 http://skyserver.sdss.org/DR16/en/home.aspx (accessed on 30 August 2022).

6 http://dr6.lamost.org/v2/ (accessed on 30 August 2022).

7 Although NED considers 1RXS J212728.9 − 600049 as the X-ray counterpart of NGC 7059, but, as we have shown, this is not the case.

8 The reclassification of the present sample of 2980 sources on a case-by-case basis required more than three years of one person's almost full time.

9 https://iopscience.iop.org/article/10.1088/0004-637X/748/1/49 (accessed on 30 August 2022).

10 http://skyserver.sdss.org/DR16//en/tools/explore/summary.aspx?ra=220.9871&dec=25.029 (accessed on 30 August 2022).

[11] http://skyserver.sdss.org/DR16//en/tools/explore/summary.aspx?ra=0.384875&dec=21.226739 (accessed on 30 August 2022).
[12] https://www.cosmos.esa.int/web/life-cycle-of-agn/home (accessed on 30 August 2022).
[13] http://skyserver.sdss.org/DR16//en/tools/explore/summary.aspx?ra=200.2967&dec=22.27 (accessed on 30 August 2022).
[14] See here https://fermi.gsfc.nasa.gov/science/instruments/table1-1.html (accessed on 30 August 2022) for a comparison between EGRET and LAT instruments.
[15] http://skyserver.sdss.org/DR16//en/tools/chart/navi.aspx?ra=243.921721316305&dec=47.1866096751966&scale=0.2 (accessed on 30 August 2022).

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