

The Palermo Swift-BAT hard X-ray catalogue

III. Results after 54 months of sky survey[★]

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ABSTRACT

Aims. We present the Second Palermo *Swift*-BAT hard X-ray catalogue obtained by analysing data acquired in the first 54 months of the *Swift* mission.

Methods. Using our software dedicated to the analysis of data from coded mask telescopes, we analysed the BAT survey data in three energy bands (15–30 keV, 15–70 keV, 15–150 keV), obtaining a list of 1256 detections above a significance threshold of 4.8 standard deviations. The identification of the source counterparts is pursued using two strategies: the analysis of field observations of soft X-ray instruments and cross-correlation of our catalogue with source databases.

Results. The survey covers 50% of the sky to a 15–150 keV flux limit of 1.0×10^{-11} erg cm⁻² s⁻¹ and 9.2×10^{-12} erg cm⁻² s⁻¹ for $|b| < 10^\circ$ and $|b| > 10^\circ$, respectively. The Second Palermo *Swift*-BAT hard X-ray catalogue includes 1079 ($\sim 86\%$) hard X-ray sources with an associated counterpart (26 with a double association) and 2 with a triple association) and 177 BAT excesses ($\sim 14\%$) that still lack a counterpart. The distribution of the BAT sources among the different object classes consists of $\sim 19\%$ Galactic sources, $\sim 57\%$ extragalactic sources, and $\sim 10\%$ sources with a counterpart at softer energies whose nature has not yet been determined. About half of the BAT associated sources lack a counterpart in the ROSAT catalogues. This suggests that either moderate or strong absorption may be preventing their detection in the ROSAT energy band. The comparison of our BAT catalogue with the Fermi Large Area Telescope First Source Catalogue identifies 59 BAT/Fermi correspondences: 48 blazars, 3 Seyfert galaxies, 1 interacting galaxy, 3 high mass X-ray binaries, and 4 pulsars/supernova remnants. This small number of correspondences indicates that different populations make the sky shine in these two different energy bands.

Key words. catalogues – surveys – X-rays: general

1. Introduction

The Burst Alert Telescope (BAT, Barthelmy et al. 2005) onboard the *Swift* observatory (Gehrels et al. 2004) is a coded-aperture imaging camera operating in the 15–150 keV energy range with a large field of view (1.4 steradian half coded) and a point spread function (PSF) of 17 arcmin (full width half maximum). The telescope is mainly devoted to the monitoring of a large fraction of the sky for the occurrence of gamma ray bursts (GRBs). While waiting for new GRBs, BAT continuously collects spectral and imaging information about the sky, covering a fraction of between 50% and 80% of the sky every day, providing the opportunity for a substantial gain in our knowledge of the Galactic and extragalactic sky in the hard X-ray domain and increasing the sample of objects that contribute to the luminosity in this energy range. The first results of the BAT survey were presented in Markwardt et al. (2005), Ajello et al. (2008a),

Ajello et al. (2008b), Tueller et al. (2008), Tueller et al. (2010), Cusumano et al. (2010), and Masetti et al. (2010). The First Palermo *Swift*-BAT hard X-ray catalogue (Cusumano et al. 2010) contains a list of 754 hard X-ray sources with an associated counterpart detected in the first 39 months of the *Swift* mission. Among them, $\sim 69\%$ are extragalactic, $\sim 27\%$ are Galactic objects, $\sim 4\%$ are already known X-ray or γ -ray emitters whose nature has not yet been determined.

In this paper, we provide the Second Palermo *Swift*-BAT hard X-ray catalogue obtained from the analysis of the data relative to the first 54 months of the *Swift* mission and including 1256 BAT high-energy sources. The paper is organised as follows: in Sect. 2, we describe the screening and the analysis of the BAT survey data and the global survey properties; in Sect. 3, we illustrate our analysis strategy; in Sect. 4, we describe the counterpart association strategy; the 54-month catalogue and its properties are described in Sects. 5 and 6. Then, in Sect. 7 we summarise our results.

[★] Catalogue is also available in electronic form at the CDS via anonymous ftp to cdsarc.u-strasbg.fr (130.79.128.5) or via <http://cdsarc.u-strasbg.fr/viz-bin/gcat?J/A+A/524/A64>

2. The BAT survey data

The results presented in this paper were obtained by analysing the first 54 months of BAT survey data, from 2004 December to the end of 2009 May. The data were retrieved from the *Swift* public archive¹ in the form of detector plane histograms (DPH): three-dimensional arrays (two spatial dimensions, one spectral dimension) that collect count-rate data in 5-min time bins for 80 energy channels.

To process the survey data, we developed and applied a code that performs screening, mosaicking, and source detection on data from coded mask instruments. This code is described in detail in [Segreto et al. \(2010\)](#). To screen out poor quality files from the data set, we rejected the DPHs:

- with unstable spacecraft attitude (i.e., with a significant variation in pointing coordinates);
- produced near the SAA and characterized by a count rate much higher than the average value;
- affected by inaccurate position reconstruction: this was verified through a pre-analysis procedure where the position of the sources detected in single DPHs was checked against a list of hard X-ray sources and transients (see [Cusumano et al. 2010](#), for details);
- that were very noisy, i.e., with a standard deviation in the count rate (subtracted of both bright sources and background) significantly larger (a factor of 2) than that expected from statistics.

After the screening based on these criteria, the usable archive has a total nominal exposure time of ~ 100 Ms, corresponding to $\sim 92\%$ of the total survey exposure time during the period under investigation.

Figure 1 shows the sky coverage, defined as the fraction of the sky covered by the survey as a function of the 15–150 keV detection limiting flux, at different survey epochs starting from the beginning of the mission. The limiting flux of a given sky direction is calculated by multiplying the local image noise by a detection threshold of 4.8 standard deviations. We derived the sky fraction for two sky regions (top panel: $|b| < 10^\circ$, bottom panel: $|b| > 10^\circ$). The 54-month BAT survey covers 50% of the sky to a flux limit of 1.0×10^{-11} erg cm $^{-2}$ s $^{-1}$ and 9.2×10^{-12} erg cm $^{-2}$ s $^{-1}$ for $|b| < 10^\circ$ and $|b| > 10^\circ$, respectively. The insets in Fig. 1 show the limiting flux achieved for 50% of the sky as a function of the cumulative observing time of the screened BAT survey data; the data are modelled well with a power law ($N \times t^\alpha$, where $N = (7.5 \pm 0.3) \times 10^{-11}$ erg cm $^{-2}$ s $^{-1}$ and $\alpha = -0.49 \pm 0.02$ for $|b| < 10^\circ$ and $N = (6.4 \pm 0.2) \times 10^{-11}$ erg cm $^{-2}$ s $^{-1}$ and $\alpha = -0.49 \pm 0.01$ for $|b| > 10^\circ$), both being consistent with the $t^{-0.5}$ behaviour expected if the statistical errors dominate over the systematic ones.

The minimum detection limiting flux is not fully uniform on the sky. Figure 2 shows the limiting flux map in Galactic Aioff projection, with the ecliptic coordinates grid superimposed. The Galactic centre and the ecliptic plane are characterized by a poorer sensitivity because of high contamination from intense Galactic sources and to the observing constraints on the *Swift* spacecraft. The highest flux sensitivity is achieved close to the ecliptic poles, where a detection flux limit of $\sim 6.2 \times 10^{-12}$ erg cm $^{-2}$ s $^{-1}$ is reached; the lowest flux sensitivity is in the region of the Galactic centre with a detection flux limit of $\sim 3 \times 10^{-11}$ erg cm $^{-2}$ s $^{-1}$.

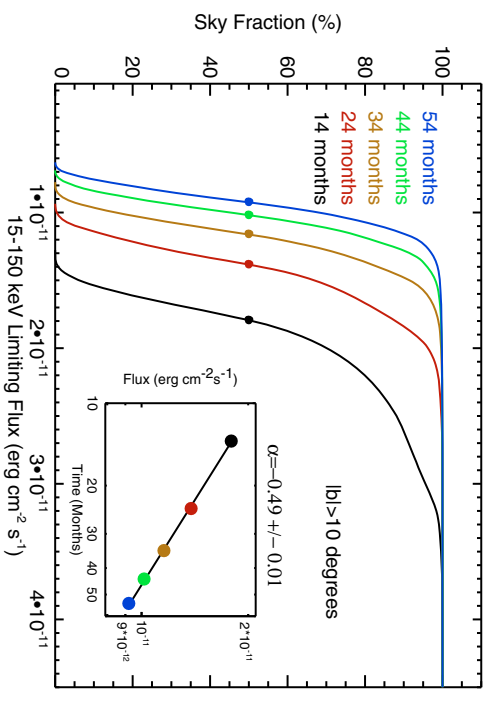
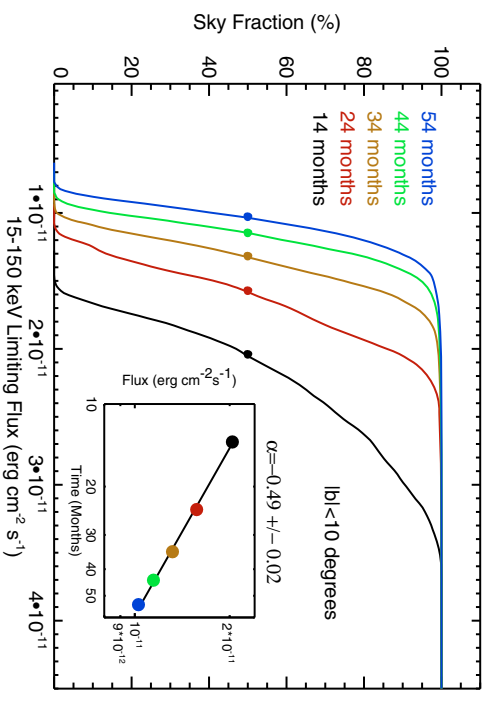


Fig. 1. Fraction of the sky (top: $|b| < 10^\circ$, bottom: $|b| > 10^\circ$) covered by the BAT survey as a function of the 15–150 keV detection limiting flux for a detection threshold of 4.8 standard deviations. Different colours refer to different survey epochs. The insets show the limiting flux achieved for 50% of the sky as a function of time; the best fit is a power law consistent with $t^{-0.5}$.

We produced all-sky maps in three energy bands (15–30 keV, 15–70 keV and 15–150 keV) using the HEALPIX-based all-sky spherical grid projection ([Górski et al. 2005](#)) with a pixel size of ≈ 2.5 arcmin radius.

For each of these energy ranges, we derived a signal-to-noise ratio (S/N) map as the ratio of the mosaic intensity to the associated statistical error. Figure 3 shows the distribution of the significance in the 15–150 keV energy range. This distribution is well described by a Gaussian curve with zero mean and unitary variance, except for the positive tail caused by hard X-ray emitters. The same result was also obtained for the significance maps in the other two energy ranges.

3. Detection strategy

The source detection was performed by searching for local excesses in the S/N maps, then refining their position and peak significance using a local bidimensional fit. Detections with peak significance greater than 4.8 standard deviations were included in our list of detected sources.

Adopting this threshold, we expected ~ 15 spurious detections on each all-sky map; this number was evaluated by applying the detection algorithm to several all-sky maps obtained from

¹ <http://heasarc.gsfc.nasa.gov/cgi-bin/W3Browse/swift.pl>

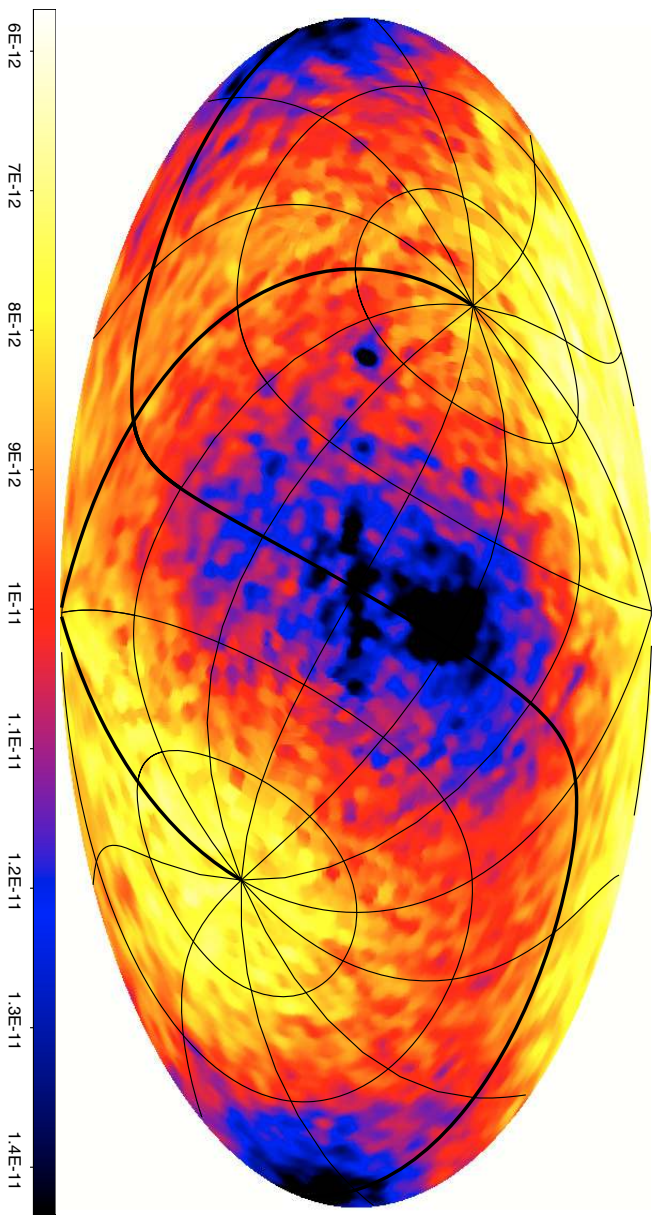


Fig. 2. Map of the limiting flux of the 54-month BAT survey in the 15–150 keV band, projected in Galactic Aitoff coordinates, with the ecliptic coordinates grid superimposed. The colour bar shows the scale in $\text{erg cm}^{-2} \text{s}^{-1}$.

in all the three energy bands, 230 in two energy bands, and 220 in only one of the three energy bands (74, 59, and 87 in the 15–150 keV, 15–30 keV, and 15–70 keV map, respectively). We assume the most accurate source coordinates to be those obtained in the sky map with the highest detection significance.

4. Association strategy

To find the most likely counterpart to the detected BAT hard X-ray excesses, we applied two different strategies: an analysis of archival soft X-ray observations (strategy A) and a cross-correlation with a list of possible counterparts (strategy B).

4.1. Strategy A

We analysed all the available soft X-ray archival observations whose field of view covers the position of the BAT source candidates. We first considered the huge set of *Swift*-XRT observations, many of which were performed for this purpose. A total of 751 sky positions of the BAT source candidates were covered by XRT observations. We applied a blind detection algorithm to the XRT images using XIMAGE v4.0. We assumed that an XRT source was the counterpart of a BAT detection if its position was within a 6 arcmin radius error circle (99.7% confidence level for a source detection at 4.8 standard deviations, Segreto et al. 2010) and its rate was higher than $8 \times 10^{-3} \text{ count s}^{-1}$ in the 0.2–10 keV energy range or higher than $8 \times 10^{-4} \text{ count s}^{-1}$ in the 3–10 keV energy range (criterion 1). These two thresholds were derived by assuming that a source is detected at about the survey limiting flux ($\sim 10^{-11} \text{ erg cm}^{-2} \text{ s}^{-1}$, see Fig. 1) and extrapolating the XRT count rate to a power-law spectral energy distribution of photon index $1 < \Gamma < 3$ and an absorbing column $10^{20} \text{ cm}^{-2} < N_H < 10^{24} \text{ cm}^{-2}$ and allow us to associate either faint or very absorbed sources with the BAT detection. We

found that 595 BAT excesses could be associated with a single XRT source, while 60 BAT excesses could be associated with more than one XRT source (42 with a double association and

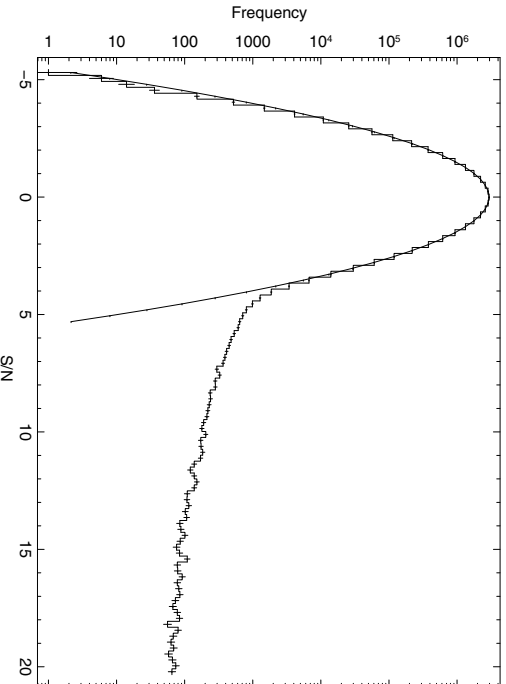


Fig. 3. Distribution of pixel significance in the BAT all-sky map. The continuous curve is the result of a Gaussian fit obtained by excluding the distribution tail. The best-fit model parameters are consistent with a mean and standard deviation of 0.0 and 1.0, respectively.

simulated empty field observations. Therefore, the total number of spurious detections was between 15 and 45 ($\sim 1\%$ to $\sim 3\%$ of the total number of our detections, see below), the best case occurring if each noise fluctuation above the threshold appeared simultaneously in all the three bands, the worst case occurring if each fluctuation appeared only in one energy band.

The final catalogue is built by cross-correlating and merging the detection catalogues obtained in the three energy bands: source candidates detected in the sky maps of different energy bands were merged and reported in the final catalogue as a single source candidate if their positions were consistent within the relevant error box (95% containment radius, Segreto et al. 2010).

We obtained a list of 1256 source candidates detected in at least one of the three energy bands: 806 sources were detected

18 with a triple association). In the latter cases, we associate to the BAT excess the XRT source with either a 0.2–10 keV or 3–10 keV count rate at least a factor of 5 brighter than the other candidates in the field (criterion 2). This criterion leaves only 8 BAT excesses with a double XRT association, which are reported in the catalogue. The number of XRT counterpart candidates rejected after applying this criterion is $42 + 18 \times 2 - 8 = 70$. For 96 of the BAT source candidates covered by an XRT observation, we were unable to detect any soft X-ray counterpart.

To evaluate the number of expected spurious associations, we collected a large sample (365) of XRT observations of GRB fields, using only late follow-ups (where the GRB afterglow had faded) with a similar exposure time distribution as the XRT pointings of the BAT sources. We searched for sources within a 6.0 arcmin error circle centred on the nominal pointing position in each of these fields (excluding any GRB residual at-terglow) and satisfying criterion 1. We detected 33 sources that, normalized to the number of XRT follow-ups ($33 \times 751/365 \simeq 68$), is consistent with the number (70) of XRT sources that survived criterion 1 but were rejected by criterion 2. Therefore, the number of expected spurious associations can be assumed to be negligible.

For the BAT positions not covered by XRT observations, we searched for pointed archival observations with other X-ray instruments, in the following order: Beppo-SAX, ASCA, Newton-XMM, Chandra, ROSAT. We did not use ROSAT observations performed during the ROSAT All Sky Survey campaign: the list of sources extracted from this campaign (Voges et al. 1999) was used in strategy B (see Sect. 4.2). A threshold criterion analogous to that applied to the *Swift*-XRT observations was used to select the most reliable association. The rate thresholds for criterion 1 for each instrument were derived by converting the *Swift*-XRT count rate threshold to the relevant equivalent count rate assuming a power law with a photon index $\Gamma = 2$ and an absorbing column of 10^{21} cm^{-2} . For ROSAT, only a 0.2–2.4 keV rate threshold was applied. A total of 288 of the BAT source candidates positions not observed with *Swift*-XRT were covered by observations of these other X-ray telescopes. We identified 275 unambiguous associations and 5 double possible associations. To resolve the ambiguity in these cases, we applied criterion 2 as for XRT, finding no BAT excesses with more than one possible source association. Since we applied the same threshold criteria as for *Swift*-XRT, we can confidently assume a negligible number of spurious associations.

Finally, the identification of the soft X-ray counterpart was performed by searching in the SIMBAD² and NED³ databases within the soft X-ray error box. In the few cases where the soft X-ray counterpart is an unknown source, we report it in our catalogue as a new source with a name composed by the PBCX acronym (Palermo BAT Catalogue X-ray source) followed by its soft X-ray coordinates with the precision of 1.5 arcsec in RA and 1 arcsec in Dec.

With strategy A we were able to associate 920 BAT excesses to a single softer counterpart and 8 BAT excesses to a double softer counterpart. 328 BAT excesses still lacking an association.

4.2. Strategy B

To find an association for the 328 BAT excesses still lacking an association, we adopted the following strategy. We compiled

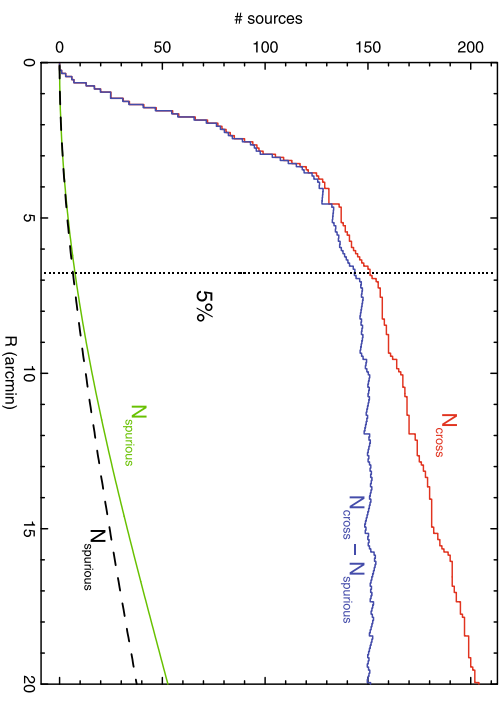


Fig. 4. Cumulative distribution of the number of BAT excesses not associated with strategy A having at least one of the strategy B list sources (see Sect. 4) within a given distance (red stepped line). The green continuous line represents the number of spurious associations evaluated using Eq. (1), while the black dashed line is the mean number of spurious associations evaluated by using a control sample of sky positions generated by scrambling the coordinates of the BAT excesses. The blue stepped line represents the true associations obtained as the difference between the red stepped line and the green continuous line. The vertical dotted line marks the radius (6.8 arcmin) that produces 5% of spurious associations.

a list of possible counterparts (hereafter strategy B source list: SBSL) merging the following catalogues:

- high and low mass X-ray binaries, cataclysmic variables, supernova remnants and pulsars, Seyfert galaxies, unclassified AGNs, cluster of galaxies, interacting galaxies, LINERs, and γ -ray sources, whose lists were extracted from the SIMBAD database on January 2010;
- the *Roma-BZCAT* (Massaro et al. 2009);
- the ROSAT All Sky Survey (RASS) Bright source catalogue (Voges et al. 1999).

The resulting catalogue contains $N_{\text{SBSL}} = 60\,829$ sources.

The number $N_{\text{cross}}(R)$ of BAT excesses for which at least one SBSL source was within a specified distance R is represented by the red stepped line in Fig. 4.

Assuming that N_{true} of the $N_{\text{BAT}} = 328$ BAT excesses have a counterpart in a generic catalogue of N_{cat} sources evenly distributed across the sky with a density $\lambda = N_{\text{cat}}/4\pi$, the number of expected spurious associations N_{spurious} generated by the $N_{\text{BAT}} - N_{\text{true}}$ sources without a counterpart in the catalogue is expressed by

$$N_{\text{spurious}}(R) = (N_{\text{BAT}} - N_{\text{true}}) \times (1 - e^{-\pi\lambda R^2}). \quad (1)$$

To a first approximation we assumed that SBSL is uniformly distributed across the sky, so we apply the above expression with $N_{\text{cat}} = N_{\text{SBSL}}$. Since N_{true} is not known in advance, we used the following procedure: we increased N_{true} with a unitary step and evaluated the difference between $N_{\text{cross}}(R)$ and $N_{\text{spurious}}(R)$. After increasing the correlation radius, this curve flattens because no further true associations are obtained. This happens for $N_{\text{true}} \sim 195$. The blue stepped line in Fig. 4 shows $N_{\text{cross}}(R) - N_{\text{spurious}}(R)$ and the green continuous line represents $N_{\text{spurious}}(R)$.

As a further check, we defined a control sample, by generating 1000 lists of 328 – $N_{\text{true}} = 133$ sky positions: to preserve

² <http://simbad.u-strasbg.fr/simbad/>

³ <http://nedwww.ipac.caltech.edu/>

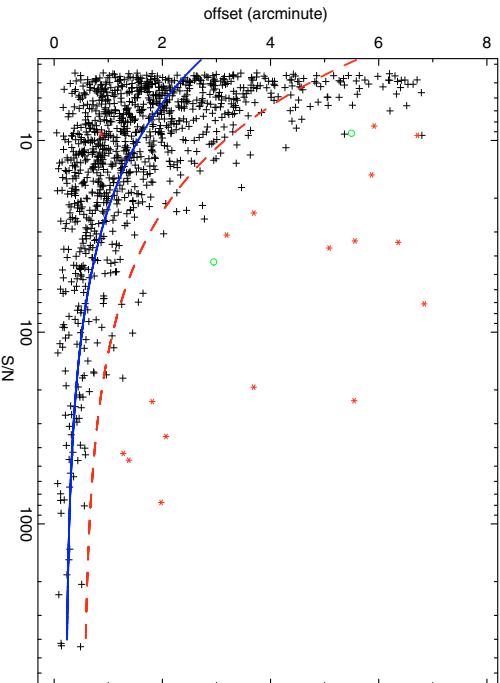


Fig. 5. Offset between the BAT position and the counterpart position as a function of the detection significance. A few values are far from the overall distribution either because they are in crowded fields and their reconstructed sky position is contaminated by the PSF of the nearest sources (red stars) or because they are extended sources (green circles). The solid blue line represents the fit to the data (excluding the outliers) with a power law. The dashed red line represents the 95% containment radius.

the Galactic coordinate distribution we scrambled the arrays of Galactic latitude and longitude of the BAT coordinate excesses and then extracted 133 couples of coordinates from these scrambled arrays. The mean number of spurious associations was then evaluated as a function of the association radius (Fig. 4, dashed line). This curve is in perfect agreement with the analytical one (green continuous line) out to ~ 8 arcmin and increases in size more slowly at larger distance. We verified that this difference is due to the inhomogeneity in SBSL and in particular to the clustering of sources in regions covered by deep optical surveys.

The ratio of $N_{\text{spurious}}(R)$ to $N_{\text{cross}}(R)$ is an estimate of the fraction of spurious association as a function of the association radius. We decided to accept a maximum of 5% of spurious associations that corresponds to an association radius of 6.8 arcmin. With this strategy, we associate 151 BAT sources with counterparts (131 with a single counterpart, 18 with a double counterpart, and 2 with a triple counterpart). The expected number of spurious associations is 6.8 ± 2.5 .

As a result of these two association procedures, we found that 1079 BAT sources have at least an associated counterpart (1051 with a single counterpart, 26 with a double counterpart, and 2 with a triple counterpart) and that 177 sources still lack a counterpart. The probability of spurious association is negligible for sources associated with strategy A and 5% for those associated with strategy B.

In Fig. 5, we plot the offsets of each BAT source excess with respect to its associated counterpart versus (vs.) the detection significance (S/N). The offset of a few sources is far from the overall distribution: points indicated by a star (sources number 286, 328, 796, 856, 860, 869, 870, 902, 928, 949, 950, 954, 955, 956, 963, 977, and 979 in Table 2) are in crowded fields, and the reconstructed sky position is contaminated by the PSF of the nearest sources; those marked with a circle are extended sources (Coma cluster and Abell 2256). The distribution (excluding the outliers) can be modelled with a power law plus a constant giving the following best fit equation:

$$\text{Offset}(\prime) = (7.2 \pm 1.2) \times [\text{S}/\text{N}]^{-0.76 \pm 0.10} + (0.21 \pm 0.03), \quad (2)$$

where the constant represents the systematic offset. At the detection threshold of 4.8 standard deviations, the average offset is 2.4 arcmin. The dashed red line in Fig. 5 represents the 95% containment radius evaluated as described in Segreto et al. (2010),

$$R_{95}(\prime) = 12.5 \times [\text{S}/\text{N}]^{-0.68} + 0.54 \quad (3)$$

where S/N is the detection significance.

5. The 54-month catalogue

The complete catalogue of the sources detected in the first 54 months of BAT survey data is reported in Table 2. The table contains the following information:

- Second Palermo BAT catalogue (2PBC) name of the source (Col. 2), built from the BAT coordinates with the precision of 1.5 arcmin on RA and 1 arcmin on Dec.
- Counterpart association (Col. 3) and source type (Col. 4) coded according to the nomenclature used in SIMBAD. For the blazars included in the Roma-BZCAT (Massaro et al. 2009), we report the nomenclature used in that catalogue: BZB for BL Lac objects, BZQ for flat-spectrum radio quasars, and BZU for blazars of uncertain type.
- The RA and Dec of the BAT source in decimal degrees (Cols. 5, 6) measured in the energy band with the highest detection significance.
- The 95% error radius (Col. 7) and offset with respect to the counterpart position (Col. 8).
- Source significance (Col. 9) obtained in the energy band with the highest significance (a flag in Col. 19 indicates the energy range with the maximum significance).
- Flux and errors (Cols. 10 and 11) in the 15–150 keV band averaged over the entire survey period. To produce spectra for the detected sources, we created all-sky maps in eight energy bands (15–20 keV, 20–24 keV, 24–35 keV, 35–45 keV, 45–60 keV, 60–75 keV, 75–100 keV, and 100–150 keV) from which we extracted the rates and their errors from the pixel corresponding to the most likely position of each BAT source (Sect. 3). These spectra were analysed using the BAT spectral redistribution matrix⁴ and the fluxes in the 15–150 keV were evaluated by fitting the spectra with a simple power law.
- Hardness ratio (HR, Col. 12) and error (Col. 13) obtained as the ratio of the counts in the 35–150 keV band to those in the 15–150 keV band.
- Redshift of the extragalactic sources (Col. 14) from the SIMBAD database (or NED, for the few cases that were not reported in SIMBAD).
- Rest-frame luminosity (in units of $\log(\text{erg s}^{-1})$) in the 15–150 keV band (Col. 15) calculated, when the redshift is available, using the expression

$$L_{15-150 \text{ keV}} = 4\pi D_L^2 \frac{F_{15-150}}{(1+z)^2 \tau}, \quad (4)$$

where F_{15-150} is the observed flux in the 15–150 keV band, Γ is the photon index obtained from the spectral fit, D_L is the luminosity distance of the source, and z is its redshift. For sources with redshift < 0.01 , we used the distance reported in the Nearby Galaxies Catalogue (NBG, Tully 1988) or NED, for the few cases that were not reported in the NBG catalogue.

⁴ <http://heasarc.gsfc.nasa.gov/docs/heasarc/caldb/data/swift/bat/index.html>

– Variability index (Col. 16). In this second catalogue, we added a characterization of the time behaviour of the BAT-detected sources: the light curve of each source was binned at 7-days and the variability was investigated using a simple χ^2 test. The rate in the j th 7-day time bin (R_j) is evaluated by weighting the rates of the light curve at maximum resolution by the inverse square of the corresponding statistical error

$$R_j = \frac{\sum r_i / e r_i^2}{\sum 1 / e r_i^2}, \quad (5)$$

where r_i are the rates observed in the light curve at maximum resolution, and $e r_i$ are the corresponding statistical errors. The error in R_j is $ER_j = \left(\sqrt{\sum 1 / e r_i^2} \right)^{-1}$. The variability index is defined as

$$V = \sum w_j (R_j - \langle R \rangle), \quad (6)$$

where $w_j = [ER_j^2 + (f \times R_j)^2]^{-1}$ and $\langle R \rangle = \sum w_j R_j / \sum w_j$. A systematic error of $f \times R_j$ with $f = 5\%$ was added in quadrature to the statistical error of each bin, to obtain a variability index $V \sim 1$ for Crab, Vela Pulsar, and PSR 0540-69.

– Flag column (Col. 17) with information on: energy band with the highest significance (A), flag for already known hard X-ray sources (B), position with respect to the Galactic plane (C), and strategy used for the identification (D, see Sect. 4).
 – Flag column (Col. 18) with information on the cross correlation between the BAT sources and the ROSAT, INTEGRAL, and *Fermi* catalogues. A BAT source is associated with a ROSAT source if the BAT counterpart lies within the 3σ error box of a source reported in the RASS bright and faint source catalogues (Voges et al. 1999, 2000). The cross-correlations of the BAT catalogue with the ISGRI sources and the *Fermi* sources were performed using the INTEGRAL General Reference Catalogue V.31⁵ and the *Fermi* Large Area Telescope First Source Catalogue⁶ (Abdo et al. 2010), respectively, requiring that the sources had the same associated counterpart.

6. Statistical properties of the catalogue

Table 1 compares the numbers of counterparts associated with the sources detected in the 54-month all-sky mosaic among the different object classes, with similar results for the 39-month catalogue. Percentages are evaluated for both catalogues relative to the total number of BAT-detected sources. The sample consists of $\sim 19\%$ Galactic sources, $\sim 56\%$ extragalactic sources, and $\sim 10\%$ sources with a counterpart at softer energies whose nature has not yet been determined. We also found that $\sim 15\%$ of sources have no association at other wavelengths. The distribution of the associated sources among the different classes is almost identical to that of the 39-month catalogue. There is a significant difference for the fraction of unassociated sources, which is a factor ~ 1.6 lower than in the 39-month catalogue. This is because a *Swift*-XRT follow-up campaign was requested for the unassociated sources of the 39-month catalogue and the ROSAT catalogue was used in the association strategy of the 54-month catalogue. In contrast, we have a much higher fraction of unclassified sources ($\sim 10\%$), most of which are ROSAT

Table 1. Classification of the counterparts associated with the sources detected in the 54-month BAT survey.

Class	# In 54 m (%)	# In 39 m (%)
LXB	85 (6.6)	76 (7.9)
HXB	83 (6.5)	64 (6.6)
Pulsars	11 (0.9)	10 (1.0)
SNR	7 (0.5)	5 (0.5)
Cataclysmic variables	56 (4.4)	46 (4.8)
Stars	7 (0.5)	5 (0.5)
Star clusters	1 (0.1)	0 (0.0)
Galactic (total)	250 (19.5)	207 (21.5)
Seyfert 1 galaxies	307 (23.9)	235 (24.4)
Seyfert 2 galaxies	165 (12.8)	131 (13.6)
LINERS	15 (1.2)	7 (0.7)
OSO	25 (1.9)	14 (1.5)
Blazars	97 (7.5)	71 (7.4)
Interacting galaxies	2 (0.16)	0 (0.0)
Galaxy clusters	23 (1.8)	18 (1.9)
Normal galaxies	67 (5.2)	27 (2.8)
Unclassified AGN	34 (2.6)	16 (1.7)
Extragalactic (total)	735 (57.1)	519 (54.0)
Unclassified sources	124 (9.6)	28 (2.9)
Unassociated sources	177 (13.8)	208 (21.6)

Notes. *Unclassified sources* includes all sources that have a catalogued counterpart but have not yet been classified.

sources of unknown nature. Figure 6 shows the map of the detected sources, colour-coded according to the object class and size-coded according to the 15–150 keV source flux (A), the hardness ratio (B), and the variability index (C), respectively.

Figure 7 shows the HR distribution for each class of objects. As expected, the HR distribution for BZB is softer than for BZQ: this difference arises because the 15–150 keV band samples the high energy tail of the synchrotron peak for BZB and the rising part of the Compton peak for BZQ. Blazars of uncertain classification (BZU) show an intermediate HR distribution. Clusters of galaxies fall in a very narrow region of soft HR: we verified that their spectral distribution is consistent with the tail of a thermal emission with $kT \sim 10$ keV, except for one object (CIZA J0635.0+2231), with $HR = 0.26$, where we find evidence of hard non-thermal emission that may be related to the AGN content of the cluster. The catalogue lists 67 objects classified as normal galaxies. The HR distribution of these sources peaks at ~ 0.4 in a similar way to the other classes of active galaxies. This suggests that these objects may also contain an active nucleus.

The HR distribution of the sources with uncertain classifications and of unassociated sources suggests that most of these are extragalactic nature.

Figure 8 shows the distribution of the redshift (top panel) and luminosity (bottom panel) of the Seyfert 1 and Seyfert 2 galaxies included in the 54-month catalogue. The median of the redshift distribution is higher for Seyfert 1s ($\bar{z}_{\text{S}1} = 0.040$) than for Seyfert 2s ($\bar{z}_{\text{S}2} = 0.025$). The luminosity distribution shows that Seyfert 1s are intrinsically more luminous than Seyfert 2s.

6.1. The 54-month BAT catalogue and the INTEGRAL-ISGRI catalogue

We compared the sources detected in the 54-month BAT all-sky mosaic with those detected by INTEGRAL-ISGRI and reported in the INTEGRAL General Reference Catalogue V.31. The results are plotted in Fig. 9. For each object class, we report the sources detected by each of the two telescopes, highlighting

⁵ <http://www.isdc.unige.ch/integral/data/catalog>

⁶ [http://fermi.gsfc.nasa.gov/ssc/data/access/lat/1yr_](http://fermi.gsfc.nasa.gov/ssc/data/access/lat/1yr_catalog/)
[catalog/](http://fermi.gsfc.nasa.gov/ssc/data/access/lat/1yr_catalog/)

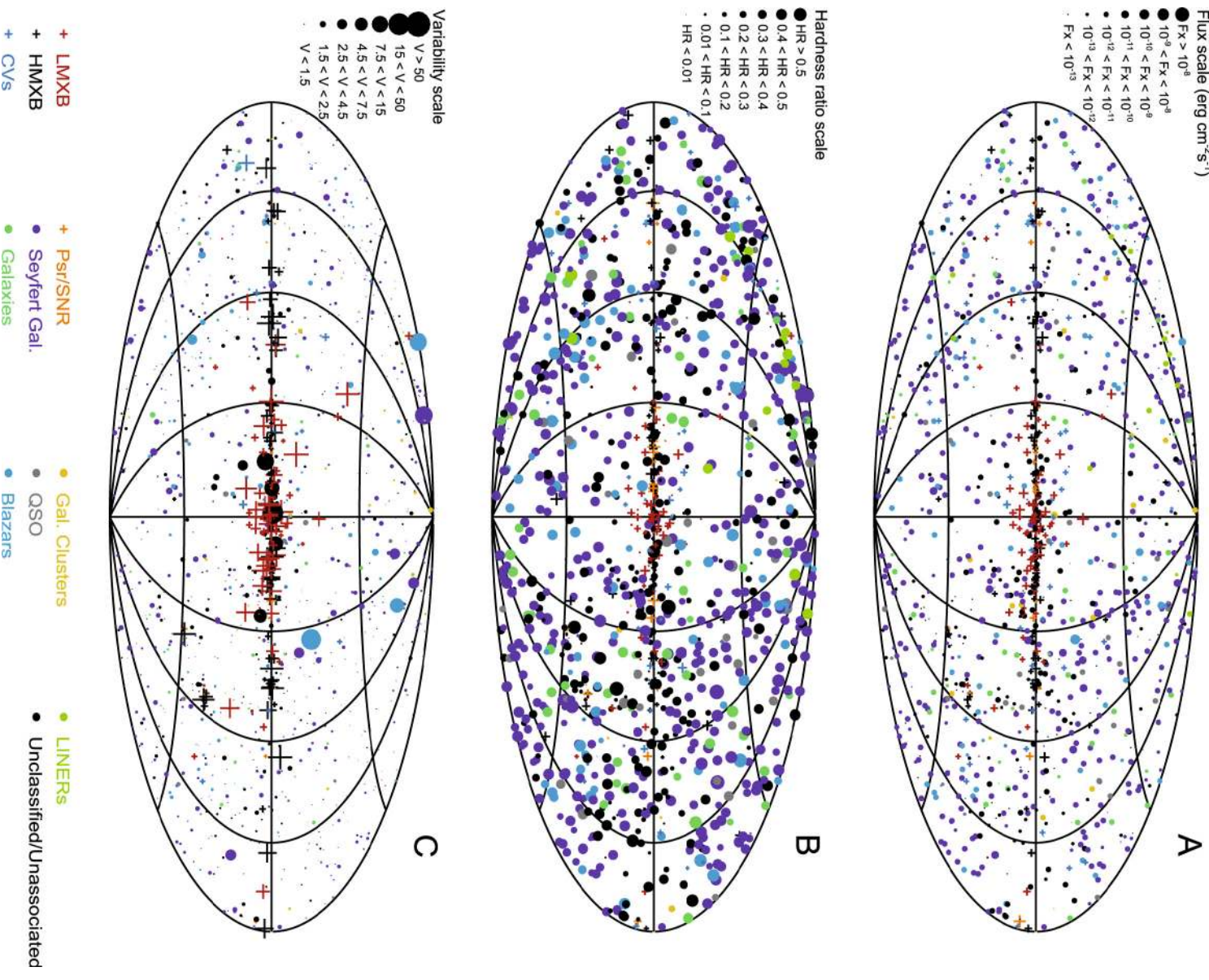


Fig. 6. Map of the sources (in Galactic coordinates) detected in the BAT survey data. The object class is colour-coded according to the legend. The size of the symbol is proportional to A) the 15–150 keV source flux; B) the hardness ratio obtained as the ratio of the counts in the 35–150 keV band to those in the 15–150 keV band; C) the variability index (as defined in Sect. 5).

those detected only by BAT. While ISGRI dedicated most of the first years of its mission to a deep scan of the Galactic plane, BAT has taken advantage of its larger (with respect to ISGRI) field of view and different pointing strategy to achieve a uniform exposure of the whole sky. Within the Galactic sample, the number of low mass and high mass X-ray binaries is marginally higher in the ISGRI catalogue, although 10 sources are detected only

with BAT. These sources have a transient behaviour and are captured by BAT thanks to its larger field of view or because they are located in regions of low ISGRI exposure. BAT also detects a much larger sample (nearly a factor of 2) of cataclysmic variables, which are located mostly outside the Galactic plane. The BAT extragalactic sample is a factor of between 2 and 3 larger than the ISGRI sample, depending on the object class. This is

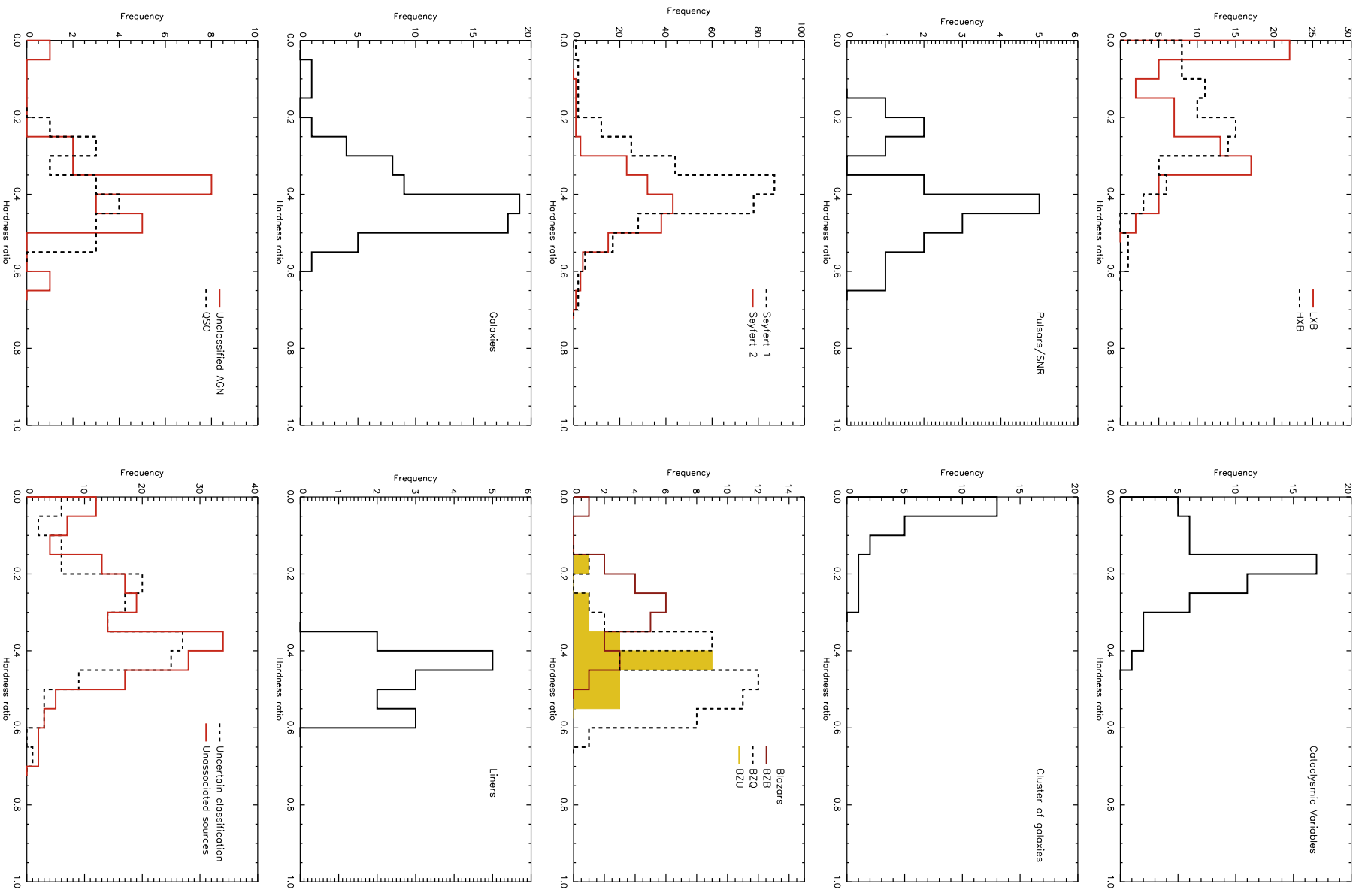


Fig. 7. Hardness ratio (35–150 keV)/(15–150 keV) distributions for the different classes of objects detected in the 54 months of BAT survey.

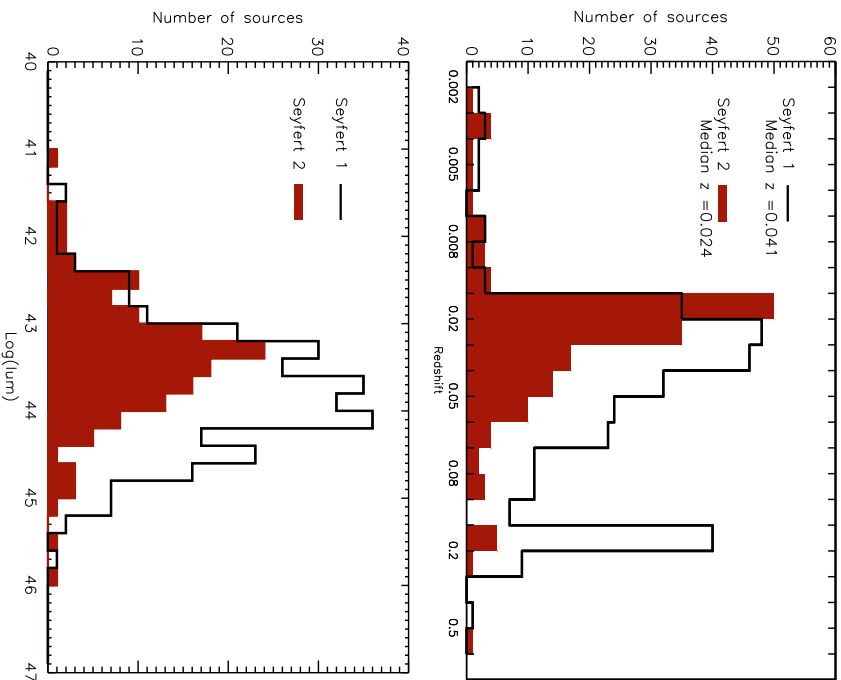


Fig. 8. Redshift distribution (*top*) and luminosity distribution (*bottom*) of the Seyfert galaxies.

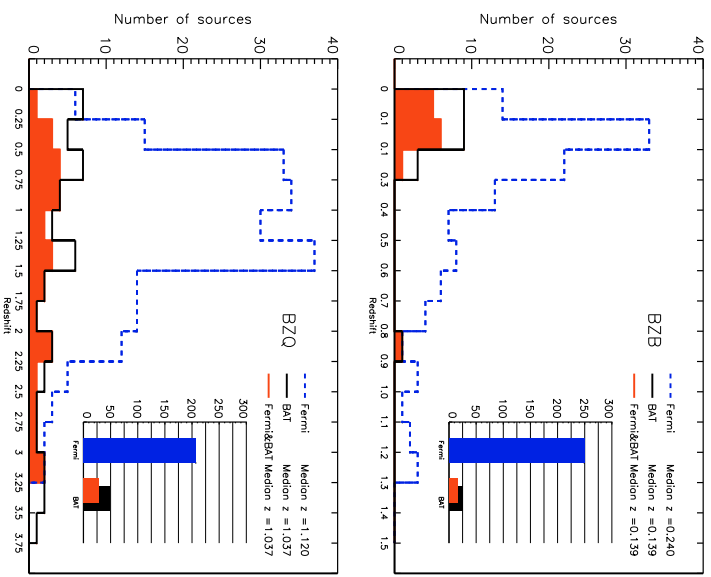


Fig. 10. Redshift distribution of the BZB (*top*) and BZQ (*bottom*) sources. The red line, the black dashed line, and the shaded blue area refer to blazars detected by Fermi, *Swift*-BAT, and common to both catalogues, respectively. The insets show the total number of blazars in each sample.

expected because of the lower limiting flux reached by BAT outside the Galactic plane.

6.2. The 54-month BAT catalogue and the Fermi Large Area Telescope First Source Catalogue

We compared our BAT catalogue with the Fermi Large Area Telescope First Source Catalogue (Abdo et al. 2010) by searching for BAT sources whose position falls inside the error box of each Fermi source⁷.

We found 59 BAT/Fermi correspondences to be associated with the same counterpart: 16 BZBs, 27 BZQs, 5 BZUs, 3 Seyfert galaxies, 1 interacting galaxy, 3 high mass X-ray binaries, and 4 pulsars/supernova remnants. Moreover, there are 4 BAT/Fermi correspondences with different counterpart association, and 10 BAT/Fermi correspondences for which the Fermi source has not been associated with any counterpart. These 14 sources have been flagged with “?” in Col. 18 of Table 2.

The largest sample of common sources is the blazar sample. In line with our association strategy, we considered only Fermi blazars with a correspondence in the BZCAT. Figure 10 shows the redshift distributions of the selected common samples, superimposed on the redshift distributions of the whole Fermi and BAT blazar samples. The median of the redshift distribution for BZB is a factor of 2 higher for the Fermi sample than the BAT one, while the common sample has value in between these two. The median of the BAT and Fermi BZQ redshift distributions are very similar. The most distant blazar, 87GB 224928.1+22014 at $z \sim 3.667$, is detected only by BAT.

⁷ [http://fermi.gsfc.nasa.gov/ssc/data/access/Lat/1yr_](http://fermi.gsfc.nasa.gov/ssc/data/access/Lat/1yr_catalog/)
[catalog/](http://fermi.gsfc.nasa.gov/ssc/data/access/Lat/1yr_catalog/)

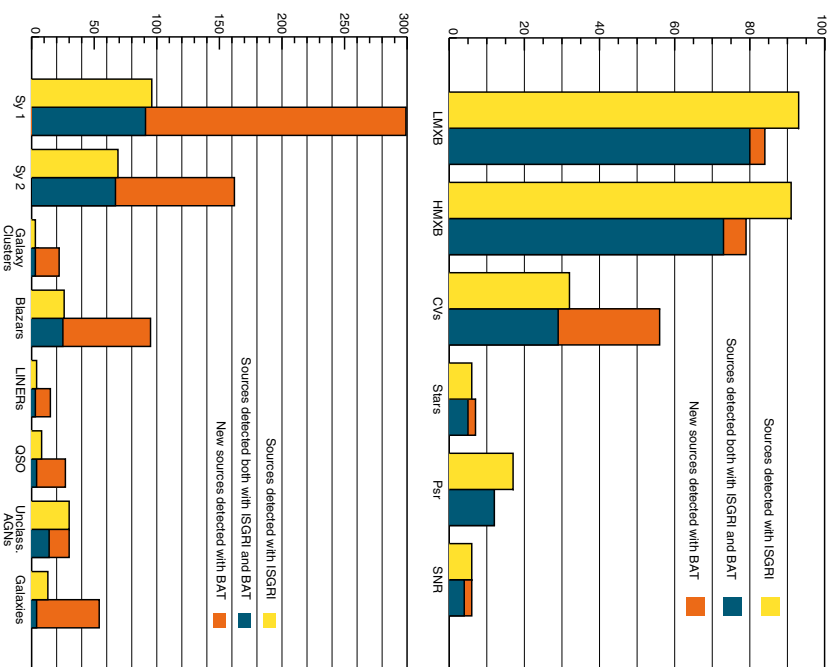


Fig. 9. Comparison between the sources in our catalogue and those detected with ISGRI and reported in the INTEGRAL General Reference Catalogue V3.1. *Top*: Galactic sources. *Bottom*: extragalactic sources.

7. Conclusions

We have analysed the BAT hard X-ray survey data of the first 54 months of the *Swift* mission. The 4.8σ 15–150 keV survey flux limit achieved on 50% of the sky is $\sim 0.9 \times 10^{-11}$ erg cm $^{-2}$ s $^{-1}$ (0.43 mCrab).

We have compiled all-sky maps for three energy bands (15–30 keV, 15–70 keV, and 15–150 keV) and searched for excesses above a significance threshold of 4.8 standard deviations. The final catalogue, obtained by cross-correlating and merging the lists of excesses detected in the three energy bands, contains 1256 source candidates. For each of them, we have searched for counterparts at lower energies using two different strategies. First we have analysed archival soft X-ray observations covering the position of the BAT excesses, applying count rate thresholds to select the most likely counterparts (strategy A). With this strategy, we have been able to associate 920 BAT excesses with a single softer counterpart; for 8 BAT excesses, we found two possible counterparts. The BAT excesses lacking any association after strategy A were cross-correlated with a list of possible counterparts compiled by merging several source lists (X-ray binaries, cataclysmic variables, supernova remnants, pulsars, cluster of galaxies, different classes of active galaxies, already known soft X-ray and γ -ray sources). This second strategy (strategy B) enabled us to associate 151 BAT sources with counterparts (18 with a double association, 2 with a triple association). The final catalogue contains 1079 BAT sources with at least one associated counterpart and 177 unassociated sources ($\sim 14\%$). The latter will be the subject of a follow-up campaign with *Swift*-XRT in the immediate future. The sources among the different object classes consist of $\sim 19\%$ Galactic sources, $\sim 57\%$ extragalactic sources, and $\sim 10\%$ sources with a counterpart at softer energies whose nature has not yet been determined.

The counterpart of 563 of the 1079 BAT sources with at least one associated counterpart is coincident with a bright ROSAT source, while 83 BAT sources have a counterpart consistent with the position of a faint ROSAT source. The remaining BAT counterparts (640) do not have any ROSAT correspondence. This

may be the signature of either moderate or strong absorption preventing detection in the ROSAT energy band.

Compared to the INTEGRAL-BIS telescope, BAT has detected a much larger number of extragalactic sources. This difference is mainly due to the different field of view of the two telescopes and their different observing strategies.

The comparison of our BAT catalogue with the Fermi Large Area Telescope First Source Catalogue ([Abdo et al. 2010](#)) has established that 59 BAT/Fermi sources are associated with the same counterpart: 16 BZBs, 27 BZOs, 5 BZUs, 3 Seyfert galaxies, 1 interacting galaxy, 3 high mass X-ray binaries, and 4 pulsars/supernova remnants. These small number of correspondences clearly indicates that the sky at these two different energy ranges is populated by different source types.

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Table 2. BAT 54-month catalogue. Sources detected for the first time as hard X-ray emitters are reported in bold face.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
1	2PBC J0000.3+0416	...	0.092	4.270	4.99	...	5.03	0.7 ± 0.5	0.4 ± 0.2	...	...	1.34	1 N h	
2	2PBC J0000.9-0708	...	0.234	-7.134	4.42	...	5.58	1.4 ± 0.7	0.33 ± 0.09	...	...	1.59	2 N h	
3	2PBC J0001.8-7658	...	0.466	-76.982	4.46	...	5.50	0.9 ± 0.6	0.6 ± 0.2	...	...	1.91	3 N h	
4	2PBC J0002.5+0320	NGC 7811	0.643	3.337	4.61	2.12	5.20	0.9 ± 0.6	0.5 ± 0.2	0.0255	43.12	1.44	3 N h b	b
5	2PBC J0004.1+7017	2MASX J00040192+7019185	1.035	70.298	4.90	1.54	5.17	0.9 ± 0.6	0.4 ± 0.1	0.0960	44.32	1.38	3 N h a I	
6	2PBC J0006.3+2012	Mrk 335	1.591	20.199	2.78	0.60	12.55	1.4 ± 0.8	0.25 ± 0.06	0.0254	43.33	1.80	3 Y h a b	
7	2PBC J0009.3-0034	2MASX J00091156-0036551 [VV2003c] J000939.5-0032	2.338	-0.576	4.02	3.35	6.56	0.8 ± 0.5	0.4 ± 0.1	0.0732	44.03	1.61	1 N h b	
8	2PBC J0010.4+1059	Mrk 1501	2.606	10.990	2.56	1.65	14.58	2.5 ± 0.7	0.35 ± 0.05	0.0893	44.69	1.71	3 Y h a b	
9	2PBC J0014.3-1851	BZBJ0013-1854	3.579	-18.860	4.95	5.98	5.09	0.6 ± 0.4	0.3 ± 0.2	0.0940	44.13	1.63	3 N l b b	
10	2PBC J0017.4-8152	1RXS J001928.1-815247	4.365	-81.870	4.98	4.29	5.04	0.5 ± 0.4	0.4 ± 0.2	...	...	1.87	1 N l a b	
11	2PBC J0018.3+8135	S5 0014+81	4.605	81.587	3.90	2.81	6.91	0.9 ± 0.5	0.30 ± 0.10	3.3870	48.30	1.55	3 Y h a b	
12	2PBC J0021.0-1908	1RXSJ002108.1-190950	5.264	-19.145	3.88	1.57	6.95	1.1 ± 0.7	0.4 ± 0.1	0.0952	44.40	1.97	1 N h b b	
13	2PBC J0023.0+6138	IGR J00234+6141	5.733	61.655	4.07	3.08	6.42	0.5 ± 0.3	< 0.1	...	...	1.28	1 Y l a I	
14	2PBC J0024.9+6407	TYCHO SNR	6.291	64.171	2.65	1.06	13.64	1.3 ± 0.7	0.16 ± 0.05	...	...	1.58	2 Y l a I	
15	2PBC J0025.6+6823	IGR J00256+6821	6.394	68.401	3.61	2.30	7.89	1.4 ± 0.9	0.51 ± 0.10	0.0120	42.66	1.31	3 Y h a I	
16	2PBC J0025.8-1900	2MASX J00254238-1900106 1RXS J002605.4-185456	6.470	-19.006	4.81	2.45	4.84	0.8 ± 0.6	0.4 ± 0.2	0.2450	45.10	1.67	3 N h b b	
17	2PBC J0026.7-5309	1RXS J002640.2-530944	6.685	-53.163	4.83	0.61	4.82	0.9 ± 0.6	0.5 ± 0.2	0.0628	43.92	1.69	1 N h b b	
18	2PBC J0028.9+5917	V709 Cas	7.213	59.296	1.40	0.50	50.93	6.8 ± 0.3	0.24 ± 0.01	...	...	1.78	2 Y l a I b	
19	2PBC J0029.3+1317	RBS 0068	7.303	13.265	3.79	0.27	7.24	1.0 ± 0.6	0.3 ± 0.1	0.1450	44.76	1.34	3 Y h a b	
20	2PBC J0030.5-5902	...	7.647	-59.042	4.14	...	6.23	1.0 ± 0.6	0.4 ± 0.1	...	...	1.93	3 N h	
21	2PBC J0033.2+6130	IGR J00333+6122	8.434	61.466	2.90	3.07	11.63	1.5 ± 0.5	0.28 ± 0.06	0.1050	44.64	1.53	1 Y l a I	
22	2PBC J0034.1-7906	2MASX J00341665-7905204	8.543	-79.113	4.91	1.45	5.17	0.4 ± 0.3	< 0.2	0.0740	43.81	1.47	2 N h b b	
23	2PBC J0034.6-0424	2MASX J00343284-0424117	8.653	-4.403	4.42	0.96	5.58	1.2 ± 0.8	0.5 ± 0.1	...	...	1.14	3 N h a	
24	2PBC J0035.8+5951	1ES 0033+59.5	8.955	59.849	2.17	0.96	20.08	2.5 ± 0.4	0.23 ± 0.03	...	...	2.59	2 Y l a I b F	
25	2PBC J0036.3+4539	2MASX J00362092+4539532	9.065	45.640	4.18	1.76	6.14	1.0 ± 0.6	0.3 ± 0.1	0.0477	43.74	1.54	3 N h b	
26	2PBC J0037.2+6120	IGR J00370+6122	9.229	61.384	2.73	2.27	12.95	1.6 ± 0.6	0.29 ± 0.06	...	...	2.45	1 Y l a I b	
27	2PBC J0038.5+2336	Mrk 344	9.628	23.607	4.79	0.40	4.89	1.0 ± 0.6	0.5 ± 0.1	0.0250	43.14	1.48	1 N h a	
28	2PBC J0040.5+2542	...	10.143	25.715	5.04	...	4.94	0.5 ± 0.3	0.4 ± 0.2	...	...	1.38	2 N h	
29	2PBC J0040.9-7915	2MASX J00404625-7914244	10.237	-79.258	4.48	1.17	5.46	0.4 ± 0.3	< 0.2	0.0333	43.02	1.56	2 N h b b	
30	2PBC J0041.6+2534	NGC 214	10.395	25.571	3.65	4.57	7.75	0.9 ± 0.6	0.6 ± 0.2	0.0150	42.68	1.49	1 Y h a	
31	2PBC J0041.7-0920	ABELL 0085	10.436	-9.363	4.14	2.06	6.24	0.6 ± 0.4	0.1 ± 0.1	0.0521	43.61	1.59	2 Y h a	
32	2PBC J0042.6+4111	RX J004241+41155	10.668	41.174	4.35	5.60	5.74	0.7 ± 0.4	0.3 ± 0.1	...	...	1.35	2 Y h a	
33	2PBC J0042.7+3017	1RXS J004240.8+301742	10.696	30.312	3.21	1.70	9.66	1.2 ± 0.7	0.26 ± 0.08	0.1400	44.83	1.59	3 N h b b	
34	2PBC J0042.8-2331	NGC 235A	10.720	-23.536	2.08	0.27	21.66	4.6 ± 0.4	0.42 ± 0.03	0.0222	43.71	1.67	3 Y h a	
35	2PBC J0042.9-1135	...	10.745	-11.592	4.65	...	5.13	0.4 ± 0.2	< 0.2	...	...	1.77	2 N h	
36	2PBC J0046.1-4007	ATESP J004620-400547	11.527	-40.123	4.18	3.09	6.15	1.0 ± 0.6	0.5 ± 0.1	0.2263	45.17	1.33	3 N h a I	
37	2PBC J0048.7+3157	Mrk 348	12.185	31.954	1.19	0.62	76.47	13.5 ± 0.3	0.418 ± 0.009	0.0151	43.84	2.95	3 Y h a I	
38	2PBC J0050.8+7648	1RXS J005107.0+765042	12.720	76.816	4.29	1.93	5.86	1.0 ± 0.6	0.5 ± 0.1	...	...	1.31	1 N h b b	
39	2PBC J0051.8-7318	SNR B0049-73.6	12.913	-73.315	2.86	3.62	11.90	1.4 ± 0.7	0.24 ± 0.06	...	...	2.81	2 Y h a b	
40	2PBC J0051.9+1725	Mrk 1148	13.010	17.437	2.40	1.82	16.51	2.7 ± 0.5	0.33 ± 0.04	0.0642	44.42	1.89	3 Y h a b	
41	2PBC J0052.6-7220	SXP 327	13.155	-72.336	4.65	3.11	5.14	0.8 ± 0.4	0.3 ± 0.1	...	...	1.59	1 N h a	
42	2PBC J0053.2-0844	NGC 291	13.322	-8.736	4.91	3.65	5.16	0.9 ± 0.6	0.6 ± 0.2	0.0189	42.88	1.45	1 N h a	
43	2PBC J0054.6+2521	RBS 0130	13.710	25.415	4.32	0.86	5.80	1.0 ± 0.5	0.2 ± 0.1	0.1550	44.83	1.81	2 Y h a b	
44	2PBC J0055.3+4612	XSS J00564+4548	13.838	46.202	2.23	0.83	18.91	2.0 ± 0.7	0.17 ± 0.04	...	...	1.36	2 Y h a	
45	2PBC J0056.5+6043	gam Cas	14.174	60.714	1.29	0.16	62.76	6.8 ± 0.2	0.12 ± 0.01	2.11	2 Y l a I b	

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Table 2. continued.

PBC name	ID	Type ^a	RA	Dec	Error radius	Offset	SNR Flux ^b		Hardness ratio	Redshift	log L_{14-150}^c	Var	Flag 1 ^d				Flag 2 ^e	
			(deg)	(deg)	(arcmin)	(arcmin)	($\text{erg cm}^{-2} \text{s}^{-1}$)	(R_{30-150}/R_{14-150})	(erg s^{-1})	A	B	C	D	I	R	F		
46 2PBC J0056.8-6002	...	...	14.207	-60.049	4.89	...	5.19	0.1 ± 0.1	< 0.2	...	...	1.80	2	N	h		
47 2PBC J0057.2+6401	...	...	14.317	64.032	4.19	...	6.11	0.8 ± 0.5	0.4 ± 0.1	...	...	1.89	3	N	l		
48 2PBC J0058.0-1648	...	...	14.520	-16.816	4.96	...	5.07	0.6 ± 0.5	0.4 ± 0.2	...	...	1.81	3	N	h		
49 2PBC J0059.8+3150	Mrk 352	Sy1	14.977	31.847	2.30	1.25	17.91	2.9 ± 0.4	0.40 ± 0.04	0.0149	43.16	1.94	1	Y	h	a	b	
50 2PBC J0100.6-4752	ESO 195-IG 021	Sy1	15.182	-47.875	3.33	1.50	9.08	1.2 ± 0.7	0.38 ± 0.09	0.0494	43.83	1.72	3	Y	h	a		
51 2PBC J0101.4-0307	1RXS J010123.5-030846	X	15.357	-3.124	4.70	1.44	5.04	1.0 ± 0.7	0.4 ± 0.1	...	...	1.50	1	N	h	b	b
52 2PBC J0102.7-7241	XTE J0103-728	HXB	15.683	-72.687	3.26	3.58	9.40	0.6 ± 0.3	< 0.1	...	...	1.69	2	N	h	b	F
	RX J0104.1-7244	HXB				6.79				...	...					
53 2PBC J0105.3+3602	...	...	16.326	36.039	4.98	...	5.04	0.4 ± 0.3	0.4 ± 0.3	...	...	1.42	1	N	h		
54 2PBC J0105.5-4211	MCG-07-03-007	G	16.375	-42.192	3.87	1.57	7.01	1.0 ± 0.6	0.5 ± 0.1	0.0302	43.33	1.63	3	N	h	a		
55 2PBC J0105.7-1415	RBS 0149	Sy1	16.433	-14.256	3.62	1.48	7.86	1.3 ± 0.6	0.28 ± 0.08	0.0670	44.16	1.25	3	Y	h	a	b	
56 2PBC J0106.8+0637	2MASX J01064523+0638015	Sy2	16.729	6.642	4.46	2.46	5.50	1.0 ± 0.5	0.4 ± 0.1	0.0409	43.57	1.41	1	Y	h	a		
57 2PBC J0107.8-1137	2MFGC 829	G	16.970	-11.605	3.87	6.20	7.01	0.9 ± 0.6	0.4 ± 0.1	0.0466	43.68	1.26	3	N	h	a		
58 2PBC J0108.3-5826	...	...	17.084	-58.437	4.83	...	4.82	0.6 ± 0.4	0.4 ± 0.2	...	...	1.45	3	N	h		
59 2PBC J0108.8+1320	3C 033	Sy2	17.193	13.338	2.63	1.56	13.92	2.6 ± 1.5	0.46 ± 0.06	0.0596	44.33	1.45	1	Y	h	a		
60 2PBC J0111.1-1616	2MASX J01111430-1615547	Sy1	17.785	-16.266	4.24	1.48	5.99	1.0 ± 0.6	0.3 ± 0.1	0.0500	43.78	1.44	2	N	h	b	b	
61 2PBC J0111.5-3804	NGC 424	Sy2	17.898	-38.079	2.92	1.58	11.44	2.0 ± 0.9	0.37 ± 0.06	0.0115	42.76	1.69	3	Y	h	a	b	
62 2PBC J0113.8-1450	Mrk 1152	Sy1	18.451	-14.845	2.92	0.47	11.46	2.0 ± 0.6	0.33 ± 0.05	0.0522	44.12	1.69	3	Y	h	a	b	
63 2PBC J0113.7+1314	Mrk 975	Sy1	18.471	13.224	3.80	2.92	7.21	1.3 ± 0.9	0.5 ± 0.1	0.0494	43.87	1.27	3	N	h	b	f	
64 2PBC J0114.3-3240	IC 1663	Sy2	18.554	-32.676	3.28	1.97	9.31	1.6 ± 0.9	0.47 ± 0.08	0.0118	42.69	1.71	1	Y	h	a		
65 2PBC J0114.4-5524	NGC 454E	Sy2	18.603	-55.401	2.81	0.23	12.31	1.5 ± 0.9	0.43 ± 0.08	0.0120	42.68	2.16	1	Y	h	a		
66 2PBC J0115.9-6248	2MASX J01154060-6249246	Sy1	18.990	-62.802	4.78	2.34	4.90	0.6 ± 0.4	0.5 ± 0.2	0.0890	44.07	1.49	3	N	h	a	b	
67 2PBC J0116.3+3102	KPG 28	GiP	19.095	31.043	4.68	4.06	5.09	0.8 ± 0.5	0.3 ± 0.1	...	...	1.87	1	N	h	b	
	NGC 452	GiP				1.79				0.0165	42.71							
68 2PBC J0116.7-1236	...	...	19.199	-12.616	4.58	...	5.27	0.8 ± 0.5	0.3 ± 0.2	...	...	1.60	3	N	h		
69 2PBC J0117.1-7326	SMC X-1	HXB	19.303	-73.441	0.75	0.56	402.77	36.2 ± 0.2	0.089 ± 0.002	...	...	69.51	2	Y	h	a	I b
70 2PBC J0118.0+6517	3A 0114+650	HXB	19.511	65.295	1.11	0.18	94.69	14.7 ± 0.3	0.247 ± 0.006	...	...	15.24	3	Y	l	a	I b
71 2PBC J0118.5+6343	V* V635 Cas	HXB	19.633	63.731	1.46	0.56	46.24	5.5 ± 0.3	0.13 ± 0.01	...	...	11.57	2	N	l	a	I
72 2PBC J0120.8-0829	2MASS J01204752-0826297	Sy1	20.201	-8.490	4.98	2.93	5.05	0.7 ± 0.4	0.3 ± 0.1	0.2296	45.09	1.51	3	N	h	b	b	
	FBQS J0120-0832	Sy2				4.85				0.2240	45.06							
73 2PBC J0120.8-1444	MCG-03-04-054	G	20.203	-14.747	4.88	1.62	5.21	0.9 ± 0.6	0.4 ± 0.1	0.0393	43.52	1.40	1	N	h	a		
74 2PBC J0122.3+5004	MCG+08-03-018	Sy2	20.629	50.068	3.95	0.95	6.75	1.2 ± 0.7	0.40 ± 0.10	0.0206	43.04	1.96	2	Y	h	a		
75 2PBC J0122.7-7322	...	...	20.698	-73.373	4.07	...	6.43	1.0 ± 0.5	0.07 ± 0.06	...	...	1.58	2	N	h		
76 2PBC J0123.1+3421	1ES 0120+340	BZB	20.782	34.361	3.60	0.85	7.93	1.0 ± 0.6	0.27 ± 0.09	0.2720	45.46	2.04	3	Y	h	a	b	
77 2PBC J0123.8-5847	RBS 0194	Sy1	20.931	-58.796	1.81	0.68	28.74	4.2 ± 0.3	0.38 ± 0.03	0.0470	44.34	2.07	3	Y	h	a	b	
78 2PBC J0123.9-3503	NGC 526	Sy1	20.977	-35.064	1.89	0.12	26.35	5.3 ± 0.3	0.43 ± 0.02	0.0192	43.64	2.02	1	Y	h	a	I b	
79 2PBC J0124.4+3346	NGC 0513	Sy2	21.121	33.780	3.35	1.22	8.97	2.2 ± 1.3	0.46 ± 0.06	0.0195	43.28	1.66	1	Y	h	a		
80 2PBC J0126.0+1518	RHS 10	Sy1	21.485	15.299	4.31	0.46	5.82	1.1 ± 0.7	0.4 ± 0.1	0.1110	44.51	1.30	1	N	h	b		
81 2PBC J0127.5+1909	Mrk 359	Sy1	21.887	19.165	4.65	0.85	5.14	0.9 ± 0.5	0.3 ± 0.1	0.0168	42.74	1.37	3	N	h	a	b	
82 2PBC J0128.0-1848	RBS 0203	Sy1	22.021	-18.782	3.35	1.61	8.98	1.6 ± 0.9	0.42 ± 0.08	0.0430	43.82	2.14	1	Y	h	a	b	
83 2PBC J0128.5+1628	MCG+03-04-043	GiP	22.126	16.481	4.08	1.91	6.39	1.2 ± 0.8	0.5 ± 0.1	0.0386	43.61	1.58	1	N	h	a		
84 2PBC J0128.6-6038	...	...	22.174	-60.647	5.01	...	4.99	0.5 ± 0.3	< 0.2	...	...	1.80	3	N	h		
85 2PBC J0129.7-4218	PBCX J012951.6-421936	X	22.434	-42.316	4.10	2.72	6.35	0.7 ± 0.4	0.2 ± 0.1	...	...	1.42	2	N	h	a	
86 2PBC J0130.2-8108	...	...	22.574	-81.135	4.83	...	4.81	0.4 ± 0.2	< 0.2	...	...	1.52	3	N	h		
87 2PBC J0132.0-3306	ESO 353- G 009	Sy2	23.020	-33.112	3.69	3.10	7.58	1.1 ± 0.6	0.40 ± 0.09	0.0165	42.84	1.46	3	Y	h	a		
88 2PBC J0132.5-7426	...	...	23.141	-74.445	4.77	...	4.92	0.4 ± 0.3	< 0.2	...	...	1.42	2	N	h		
89 2PBC J0134.0-3630	NGC 612	Sy2	23.511	-36.491	2.14	0.99	20.65	4.7 ± 1.5	0.52 ± 0.03	0.0299	43.97	1.80	1	Y	h	a		
90 2PBC J0134.5-0428	RBS 0216	Sy1	23.692	-4.515	3.11	0.66	10.26	1.6 ± 0.9	0.42 ± 0.08	0.0790	44.39	1.78	1	Y	h	a	b	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
91 2PBC J0136.5+2056	3C 47	Sy1	24.139	20.934	4.74	2.51	4.97 0.5 ± 0.3	0.2 ± 0.2	0.4250	45.65	1.34	2 N h a b	
92 2PBC J0138.6-4000	ESO 297- G 018	Sy2	24.677	-40.006	1.66	1.07	34.83 5.8 ± 0.3	0.44 ± 0.02	0.0252	43.92	1.78	3 Y h a I	
93 2PBC J0140.4-5320	2MASX J01402676-5319389	G	25.092	-53.350	3.33	1.51	9.09 1.2 ± 0.7	0.34 ± 0.08	0.0716	44.19	1.58	3 Y h a	
94 2PBC J0146.3+6144	4U 0142+614	Psr	26.600	61.742	1.77	0.59	30.22 8.1 ± 2.6	0.65 ± 0.02	...	...	2.05	1 Y l a I b	
95 2PBC J0147.0+6122	V* V831 Cas	HXB	26.767	61.373	5.04	1.08	4.94 0.9 ± 0.5	0.4 ± 0.1	...	...	1.99	3 N l a I b	
96 2PBC J0147.1-6609	ESO 80-5	Sy1	26.799	-66.156	4.93	2.82	5.13 0.5 ± 0.3	0.4 ± 0.2	0.0270	42.93	1.32	3 N h a b	
97 2PBC J0149.3-5017	2MASX J01492228-5015073	G	27.338	-50.293	4.63	2.49	5.16 0.8 ± 0.5	0.5 ± 0.2	...	...	1.45	3 N h a f	
98 2PBC J0152.7-0327	MCG-01-05-047	Sy2	28.212	-3.448	2.53	0.45	14.87 2.6 ± 0.9	0.37 ± 0.05	0.0167	43.21	1.58	3 Y h a I	
99 2PBC J0154.1-5034	...	...	28.543	-50.570	4.67	...	5.10 0.8 ± 0.5	0.4 ± 0.2	...	...	1.49	1 N h	
100 2PBC J0154.7-2707	2MASS J01544031-2707012	QSO	28.670	-27.127	3.11	0.57	10.25 1.4 ± 0.8	0.29 ± 0.07	0.7900	46.70	1.77	3 Y h a b	
101 2PBC J0155.4+0227	1ES 0152+02.2	Sy1	28.851	2.450	4.62	1.24	5.18 0.8 ± 0.5	0.3 ± 0.1	0.0820	44.13	1.61	2 N h b b	
	PC 0152+0215	EmG				3.80			0.0800	44.10			
102 2PBC J0156.1-0615	...	...	29.036	-6.261	4.89	...	5.20 0.4 ± 0.2	< 0.3	...	...	1.52	3 N h	
103 2PBC J0156.5-2040	...	...	29.135	-20.667	4.89	...	5.19 0.7 ± 0.5	0.4 ± 0.2	...	...	1.67	1 N h	
104 2PBC J0157.3+4715	...	...	29.328	47.261	4.31	...	5.83 0.9 ± 0.5	0.4 ± 0.1	...	...	1.22	3 N h	
105 2PBC J0200.1+2428	MCG+04-05-034	Sy2	30.043	24.470	4.91	2.00	5.16 0.8 ± 0.6	0.5 ± 0.2	0.0164	42.70	1.54	1 N h a	
106 2PBC J0201.0-0648	NGC 788	Sy2	30.265	-6.814	1.54	0.70	40.89 7.1 ± 0.4	0.44 ± 0.02	0.0136	43.46	2.53	3 Y h a I	
107 2PBC J0202.9-2400	RBS 0273	Sy1	30.758	-24.025	4.15	0.71	6.22 0.9 ± 0.5	0.3 ± 0.1	0.1780	44.93	2.13	1 Y h a b	
108 2PBC J0205.7-7147	RBS 279	Sy1	31.432	-71.793	4.62	4.39	5.20 0.8 ± 0.5	0.4 ± 0.1	0.2600	45.19	1.75	1 N h a b	
109 2PBC J0206.3-0016	Mrk 1018	Sy1	31.554	-0.286	2.84	0.81	12.06 2.4 ± 1.4	0.46 ± 0.06	0.0426	44.01	2.46	1 Y h a I b	
110 2PBC J0207.0+2929	RHS 13	rad	31.768	29.506	3.51	0.58	8.29 1.4 ± 0.8	0.33 ± 0.07	0.1100	44.66	1.53	1 Y h a b	
111 2PBC J0207.2+1515	V* TT Ari	No*	31.806	15.263	4.79	5.26	4.88 0.5 ± 0.3	0.3 ± 0.2	...	...	1.51	1 N h a b	
112 2PBC J0207.9-7425	RX J0209.6-7427	X	31.990	-74.426	4.40	6.78	5.63 0.4 ± 0.2	< 0.2	...	...	1.31	2 N h a	
113 2PBC J0208.6-1737	...	...	32.158	-17.625	4.17	...	6.17 1.0 ± 0.6	0.4 ± 0.1	...	...	1.55	3 N h	
114 2PBC J0209.4-1010	NGC 835	Sy2	32.360	-10.153	4.33	1.12	5.78 1.1 ± 0.7	0.6 ± 0.2	0.0123	42.58	1.75	3 Y h a	
	NGC 833	LIN				1.83			0.0130	42.63			
115 2PBC J0209.4+5226	LEDA 138501	Sy1	32.369	52.454	2.05	1.46	22.42 4.7 ± 0.3	0.39 ± 0.03	0.0492	44.42	1.64	3 Y h a I b	
116 2PBC J0211.1-4942	ESO 197-27	Sy2	32.791	-49.715	4.52	2.97	5.39 0.6 ± 0.4	0.5 ± 0.2	0.0465	43.49	1.66	3 N h b	
117 2PBC J0214.0+5148	1RXS J021417.8+514457	BZB	33.506	51.807	4.82	4.36	4.83 0.6 ± 0.3	0.2 ± 0.1	0.0490	43.54	1.64	3 N h a b	
118 2PBC J0214.7-6431	RBS 0295	Sy1	33.661	-64.514	4.53	0.74	5.37 0.5 ± 0.3	0.4 ± 0.1	0.0740	43.88	1.77	1 N h b b	
119 2PBC J0214.5-0044	Mrk 590	Sy1	33.669	-0.758	3.72	1.83	7.48 1.2 ± 0.7	0.4 ± 0.1	0.0265	43.28	2.03	1 Y h a b	
120 2PBC J0215.6-1300	3C 62	Sy2	33.904	-13.005	4.44	0.77	5.54 1.0 ± 0.6	0.5 ± 0.2	0.1470	44.73	1.50	3 N h a	
121 2PBC J0216.1+5124	2MASX J02162987+5126246	Sy2	34.057	51.423	3.49	2.07	8.37 1.7 ± 0.9	0.41 ± 0.08	0.0288	43.50	1.65	3 Y h a I	
122 2PBC J0217.0-7250	...	...	34.274	-72.844	4.85	...	5.27 0.7 ± 0.4	0.4 ± 0.1	...	...	1.46	3 N h	
123 2PBC J0217.4+7349	1ES 0212+735	BZQ	34.325	73.823	2.60	0.91	14.17 3.0 ± 1.7	0.50 ± 0.05	2.3670	47.91	1.60	1 Y h a I f F	
124 2PBC J0223.4+4549	V Zw 232	GrG	35.853	45.831	4.24	1.74	6.00 1.1 ± 0.7	0.4 ± 0.1	...	...	2.00	1 N h a	
125 2PBC J0224.9-2316	RBS 314	QSO	36.237	-23.270	4.46	3.63	5.51 0.9 ± 0.5	0.4 ± 0.1	0.2322	45.15	1.32	3 N h a b	
126 2PBC J0225.0+1848	RBS 315	BLA	36.252	18.793	2.75	1.21	12.79 3.0 ± 1.7	0.53 ± 0.06	2.6900	48.04	1.35	3 Y h a b	
127 2PBC J0225.4-6314	FRL 296	Sy1	36.344	-63.246	3.83	1.98	7.12 0.9 ± 0.5	0.4 ± 0.1	0.0598	43.86	1.65	1 Y h a b	
128 2PBC J0226.7-2819	2MASX J02262568-2820588	Sy1	36.631	-28.338	3.70	1.41	7.55 1.2 ± 0.7	0.43 ± 0.09	0.0600	44.02	2.18	3 Y h a	
129 2PBC J0228.1+1832	...	...	37.045	18.538	4.80	...	4.87 0.9 ± 0.5	0.3 ± 0.1	...	...	1.46	3 N h	
130 2PBC J0228.2+3119	Mrk 1040	Sy1	37.055	31.323	1.76	0.77	30.71 5.7 ± 0.3	0.35 ± 0.02	0.0163	43.53	1.74	3 Y h a I b	
131 2PBC J0231.9-3640	IC 1816	Sy2	37.954	-36.673	3.08	0.45	10.40 1.8 ± 1.0	0.45 ± 0.07	0.0170	43.07	1.45	1 Y h a	
132 2PBC J0232.7+2018	1ES 0229+200	BZB	38.192	20.310	2.91	1.44	11.53 2.0 ± 1.1	0.38 ± 0.06	0.1396	45.02	1.87	3 Y h a b	
133 2PBC J0234.3+3227	NGC 0973	Sy2	38.558	32.499	2.83	1.36	12.11 2.5 ± 1.5	0.48 ± 0.06	0.0150	43.10	1.87	1 Y h a I	
134 2PBC J0234.7-0846	NGC 985	Sy1	38.686	-8.778	2.40	1.79	16.47 2.6 ± 0.5	0.37 ± 0.05	0.0430	44.05	1.57	3 Y h a I b	
135 2PBC J0235.3-2935	ESO 416-G002	Sy1	38.829	-29.603	3.03	1.17	10.71 2.1 ± 1.2	0.50 ± 0.07	0.0591	44.22	1.69	1 Y h a b	
136 2PBC J0238.2-5211	RBS 0335	Sy1	39.588	-52.205	2.70	0.76	13.23 2.2 ± 1.2	0.44 ± 0.05	0.0452	44.01	1.72	1 Y h a b	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
137 2PBC J0238.3-6116	IRAS F02374-6130	G	39.594	-61.278	4.07	2.56	6.42 0.9 ± 0.5	0.5 ± 0.1	...	...	1.65	3 N h a	F
138 2PBC J0238.8-4038	RBS 0339	Sy1	39.712	-40.653	3.28	0.62	9.33 1.3 ± 0.7	0.34 ± 0.07	0.0617	44.09	1.62	1 Y h a	b
139 2PBC J0240.6+6114	GT 0236+610	HXB	40.178	61.237	2.55	1.40	14.71 2.8 ± 1.6	0.45 ± 0.05	...	...	1.76	3 Y l a	I b F
140 2PBC J0241.2-0814	NGC 1052	Sy2	40.294	-8.226	2.63	2.27	13.85 2.7 ± 1.6	0.51 ± 0.06	0.0049	42.15	1.70	1 Y h a	I
141 2PBC J0241.5+0709	1ES 0238+069	Sy1	40.385	7.188	3.56	0.63	8.08 1.5 ± 0.8	0.37 ± 0.08	0.0272	43.40	1.81	3 Y h a	b
142 2PBC J0242.3+0533	2MASX J02421465+0530361	Sy1	40.584	5.553	4.63	2.94	5.18 0.7 ± 0.5	0.4 ± 0.2	0.0690	43.88	1.63	1 N h a	I b
143 2PBC J0242.7-0000	NGC 1068	Sy2	40.671	-0.017	2.58	0.20	14.34 2.7 ± 0.5	0.33 ± 0.05	0.0037	41.92	1.92	3 Y h a	I b ?
144 2PBC J0243.9+5323	...	...	40.993	53.396	4.24	...	6.00 0.7 ± 0.5	0.2 ± 0.1	...	...	1.32	2 N h	
145 2PBC J0244.8-5816	BZBJ0244-5819	BZB	41.207	-58.283	4.74	3.15	4.97 0.4 ± 0.2	0.2 ± 0.2	0.2650	44.97	1.61	3 N h b	b
146 2PBC J0245.0+6228	1ES 0241+622	Sy1	41.230	62.488	1.53	1.22	41.73 7.9 ± 0.4	0.42 ± 0.02	0.0445	44.56	2.55	3 Y l a	I b
147 2PBC J0245.3+1045	2MASX J02451349+1047230	BZU	41.340	10.745	3.51	3.31	8.30 1.5 ± 0.9	0.5 ± 0.1	0.0770	44.31	1.43	1 Y h a	f
148 2PBC J0248.9+2627	2MASX J02485937+2630391	Sy2	42.234	26.472	3.58	2.44	8.00 2.3 ± 1.4	0.52 ± 0.08	0.0597	44.27	1.35	1 Y h a	
149 2PBC J0250.3+4645	2MASX J02502722+4647295	G	42.584	46.766	3.65	1.94	7.73 1.7 ± 1.0	0.44 ± 0.08	...	...	1.63	1 N h a	
150 2PBC J0250.8+5442	2MFGC 2280	Sy2	42.711	54.702	2.93	1.14	11.39 2.1 ± 1.2	0.45 ± 0.06	0.0150	43.02	1.79	1 Y l a	I
151 2PBC J0251.6-6800	...	...	42.904	-68.004	4.85	...	5.27 0.4 ± 0.3	0.2 ± 0.2	...	...	1.41	3 N h	
152 2PBC J0251.6-1640	NGC 1125	Sy2	42.931	-16.647	4.84	0.77	4.80 1.5 ± 1.0	0.50 ± 0.09	0.0110	42.62	1.75	1 Y h a	
153 2PBC J0252.4-0832	MCG-02-08-014	Sy2	43.087	-8.531	2.94	1.33	11.31 2.0 ± 0.8	0.33 ± 0.06	0.0167	43.10	1.57	3 Y h a	I
154 2PBC J0252.3+4309	...	...	43.094	43.162	4.40	...	5.63 1.2 ± 0.7	0.4 ± 0.1	...	...	1.67	3 N h	
155 2PBC J0255.2-0011	NGC 1142	Sy2	43.813	-0.190	1.52	0.80	42.28 8.7 ± 0.4	0.46 ± 0.02	0.0288	44.21	2.49	3 Y h a	I
156 2PBC J0256.1+1925	XY Ari	DQ*	44.036	19.435	2.33	0.39	17.44 2.9 ± 0.5	0.27 ± 0.04	...	...	1.56	2 Y h a	I
157 2PBC J0256.3-3211	ESO 417- G 006	Sy2	44.115	-32.185	2.40	1.28	16.43 2.5 ± 0.8	0.40 ± 0.05	0.0163	43.17	1.53	3 Y h a	
158 2PBC J0258.9+1335	ACO 401	CIG	44.740	13.584	3.96	0.16	6.72 0.4 ± 0.2	< 0.2	0.0748	43.86	1.14	2 N h a	b
159 2PBC J0300.0-1047	MCG-02-08-038	Sy1	45.018	-10.791	4.13	2.35	6.27 1.0 ± 0.6	0.4 ± 0.1	0.0320	43.36	1.70	3 N h b	
	KOS 025738.9-110122	AGN				2.07			0.0330	43.39			
160 2PBC J0300.2+1627	RHS 17	Sy1	45.032	16.527	3.70	1.41	7.57 1.5 ± 0.9	0.38 ± 0.08	0.0350	43.64	1.47	2 Y h a	b
161 2PBC J0302.6+2828	...	...	45.658	28.471	4.98	...	5.04 0.6 ± 0.4	0.2 ± 0.1	...	...	1.74	2 N h	
162 2PBC J0303.8-0107	NGC 1194	Sy1	45.958	-1.117	2.41	0.82	16.31 3.0 ± 1.3	0.45 ± 0.05	0.0133	43.07	1.68	3 Y h a	I
163 2PBC J0305.2-1739	...	...	46.315	-17.653	5.02	...	4.97 0.3 ± 0.2	0.3 ± 0.2	...	...	1.77	3 N h	
164 2PBC J0307.8-7249	ESO 31-8	Sy1	46.957	-72.821	4.01	1.30	6.59 0.9 ± 0.5	0.4 ± 0.1	0.0279	43.20	1.42	3 N h a	f
165 2PBC J0310.9+3239	2MASX J03104435+3239296	Sy1	47.736	32.651	4.69	2.69	5.07 0.9 ± 0.5	0.2 ± 0.1	0.1270	44.59	1.76	3 N h a	b
166 2PBC J0311.3-2046	RBS 0392	Sy1	47.819	-20.785	3.05	0.92	10.61 2.2 ± 1.2	0.41 ± 0.05	0.0660	44.36	1.78	3 Y h a	b
167 2PBC J0311.4-7649	PKS 0312-77	BZQ	47.853	-76.822	3.98	3.07	6.68 0.7 ± 0.5	0.4 ± 0.1	0.2230	45.04	1.47	3 N h a	b
168 2PBC J0311.9+5029	IRAS 03084+5017	IR	47.995	50.487	4.67	0.65	5.10 1.1 ± 0.6	0.4 ± 0.1	...	...	1.74	2 N h a	b
169 2PBC J0313.1+4119	2MASX J03130194+4120012	BZU	48.277	41.323	4.39	1.07	5.64 1.2 ± 0.7	0.4 ± 0.1	0.1360	44.73	1.78	3 N h a	I b
170 2PBC J0313.5-3506	1RXS J031325.0-350636	Sy1	48.382	-35.110	5.05	1.38	4.93 0.5 ± 0.3	0.3 ± 0.1	0.1140	44.26	1.65	3 N h b	b
171 2PBC J0315.9-1906	6dFGS gJ031552.1-190644	SyG	48.993	-19.102	4.70	1.61	5.05 0.8 ± 0.5	0.4 ± 0.2	0.0670	43.91	1.22	1 N h a	
172 2PBC J0317.1+1545	...	...	49.293	15.754	4.62	...	5.19 0.5 ± 0.3	0.3 ± 0.2	...	...	1.88	1 N h	
173 2PBC J0317.2+0116	...	...	49.301	1.268	4.33	...	5.79 1.1 ± 0.6	0.4 ± 0.1	...	...	1.91	3 N h	
174 2PBC J0318.2+6829	2MASX J03181899+6829322	Sy1	49.541	68.479	2.84	1.17	12.02 2.0 ± 0.5	0.36 ± 0.05	0.0901	44.62	1.76	1 Y h a	I
175 2PBC J0319.7+4129	NGC 1275	BZU	49.951	41.501	1.45	0.63	47.14 5.7 ± 0.3	0.16 ± 0.01	0.0175	43.61	2.46	2 Y h a	I b F
176 2PBC J0324.7+3409	1H 0323+342	Sy1	51.186	34.177	3.15	0.74	10.02 2.4 ± 1.3	0.43 ± 0.06	0.0629	44.34	2.46	1 Y h a	I b F
177 2PBC J0324.7-0300	NGC 1320	Sy2	51.236	-3.080	3.61	2.97	7.87 1.5 ± 0.9	0.41 ± 0.09	0.0092	42.45	1.36	1 Y h a	f
178 2PBC J0325.0-1223	MCG-02-09-040	Sy2	51.298	-12.354	4.36	0.55	5.71 1.1 ± 0.6	0.3 ± 0.1	0.0147	42.71	1.18	3 N h b	
	[VV2003c] J032504.9-1218	Sy2				3.49			0.0100	42.37			
179 2PBC J0325.1+4042	LEDA 097012	G	51.326	40.707	3.23	1.09	9.57 2.2 ± 1.2	0.41 ± 0.06	0.0477	44.07	1.89	1 Y h a	
180 2PBC J0325.6-0820	1RXS J032540.0-081442	X	51.408	-8.335	4.98	5.43	5.05 0.7 ± 0.4	0.3 ± 0.1	...	...	1.70	2 N l b	b
181 2PBC J0328.7-2843	PKS 0326-288	rG	52.182	-28.727	4.57	2.28	5.29 0.9 ± 0.6	0.4 ± 0.1	0.1080	44.42	1.08	1 N h a	
182 2PBC J0331.1+4353	GK Per	CV*	52.810	43.907	1.47	0.50	45.63 6.8 ± 0.3	0.19 ± 0.01	...	...	15.12	2 Y h a	I b

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
183 2PBC J0333.3+3717	IGR J03334+3718	Sy1	53.322	37.282	3.35	1.30	9.00 2.1 ± 1.2	0.34 ± 0.06	0.0547	44.17	1.57	3 N h a I b	
184 2PBC J0333.5-3608	NGC 1365	Sy1	53.381	-36.143	1.78	1.08	29.75 5.6 ± 0.3	0.40 ± 0.02	0.0055	42.58	2.07	3 Y h a I	
185 2PBC J0334.2-1514	RHS 23	Sy1	53.585	-15.244	3.42	1.34	8.65 1.3 ± 0.7	0.35 ± 0.09	0.0351	43.56	1.71	1 Y h a b	
186 2PBC J0334.9+5310	EXO 0331+530	HXB	53.756	53.175	0.73	0.27	461.33 46.1 ± 0.2	0.089 ± 0.002	...	...	35.02	2 Y l a I	
187 2PBC J0336.5+3219	NRAO 140	BZQ	54.129	32.305	2.57	0.23	14.54 3.3 ± 1.5	0.46 ± 0.05	1.2585	47.39	1.64	3 Y h a b ?	
188 2PBC J0339.2-1742	1RXS J033913.4-173553	X	54.820	-17.701	5.04	6.19	4.94 0.5 ± 0.3	0.2 ± 0.2	0.0655	43.70	1.83	3 N l b b	
189 2PBC J0342.0-2114	RBS 0462	Sy1	55.533	-21.256	2.13	1.45	20.83 3.8 ± 0.6	0.45 ± 0.03	0.0144	43.25	1.58	3 Y h a I b	
190 2PBC J0345.3-3932	2MASX J03451250-3934293	Sy1	56.316	-39.569	3.87	0.77	7.01 1.0 ± 0.6	0.34 ± 0.09	0.0430	43.66	1.52	1 Y h a	
191 2PBC J0347.0-3025	1RXS J034704.9-302409	Sy1	56.764	-30.425	4.52	1.66	5.38 0.7 ± 0.4	0.4 ± 0.1	0.0950	44.20	1.57	3 N h a b	
192 2PBC J0349.4-1158	RBS 476	BZB	57.369	-11.969	3.14	1.84	10.06 1.6 ± 0.9	0.37 ± 0.07	0.1880	45.21	1.42	3 Y h a b	
193 2PBC J0350.5-5021	ESO 201-IG 004	G	57.636	-50.349	3.22	3.15	9.61 1.8 ± 1.0	0.45 ± 0.06	...	...	1.73	1 Y h a	
194 2PBC J0351.6-4030	RBS 0482	Sy1	57.922	-40.486	3.90	1.12	6.91 0.9 ± 0.5	0.3 ± 0.1	0.0582	43.87	1.26	1 Y h a b	
195 2PBC J0353.3-6830	RHS 24	BLA	58.246	-68.528	3.17	3.00	9.89 1.0 ± 0.6	0.22 ± 0.07	0.0870	44.31	1.61	3 Y h a I	
196 2PBC J0353.5+3713	2MASX J03534246+3714077	G	58.402	37.206	3.80	2.12	7.22 1.7 ± 1.0	0.45 ± 0.08	0.0189	43.14	1.75	1 Y h a	
197 2PBC J0354.0+0250	RBS 0489	Sy1	58.522	2.844	3.73	1.64	7.45 1.3 ± 0.7	0.37 ± 0.10	0.0360	43.59	1.77	1 Y h a b	
198 2PBC J0355.3+3102	X Per	HXB	58.844	31.049	0.82	0.20	271.06 55.6 ± 0.3	0.381 ± 0.002	...	...	3.98	3 Y h a I b	
199 2PBC J0356.6-6252	2MASX J03561995-6251391	AG?	59.063	-62.881	3.91	1.33	6.88 1.0 ± 0.6	0.4 ± 0.1	...	...	1.72	3 Y h a	
200 2PBC J0356.9-4040	2MASX J03565655-4041453	G	59.228	-40.695	3.01	0.32	10.88 1.7 ± 1.0	0.45 ± 0.07	0.0747	44.36	1.48	1 Y h a	
201 2PBC J0358.7+1024	3C 098	Sy2	59.678	10.402	5.07	3.45	4.90 0.7 ± 0.4	0.2 ± 0.2	0.0304	43.17	1.63	3 N h a I	
202 2PBC J0359.0-3017	2MASX J03590885-3018102	GiC	59.768	-30.286	4.43	1.38	5.56 0.9 ± 0.6	0.4 ± 0.1	0.0938	44.29	1.66	3 N h a	
203 2PBC J0359.5+5058	4C 50.11	Q?	59.884	50.988	3.12	1.51	10.21 1.7 ± 1.0	0.43 ± 0.08	1.5100	47.31	1.87	1 Y l a f	
204 2PBC J0402.4-1803	ESO 549-G 049	Sy1	60.613	-18.055	2.84	0.56	12.04 2.4 ± 1.4	0.50 ± 0.06	0.0262	43.57	2.04	1 Y h a	
205 2PBC J0402.8+0157	MCG+00-11-007	Sy2	60.710	1.991	3.82	1.59	7.15 1.0 ± 0.6	0.4 ± 0.1	0.0127	42.56	1.66	1 Y h a	
206 2PBC J0405.6-1308	RX J0405.5-1308	BZQ	61.396	-13.143	3.50	0.42	8.34 1.6 ± 0.9	0.48 ± 0.09	0.5710	46.28	1.74	3 Y h a b F	
207 2PBC J0407.2+0341	3C 105	Sy2	61.817	3.695	2.63	0.72	13.84 2.7 ± 0.9	0.38 ± 0.05	0.0890	44.72	1.74	1 Y h a I	
208 2PBC J0407.6-6116	ESO 118-4	IG	61.901	-61.272	4.97	5.16	5.05 0.6 ± 0.4	0.4 ± 0.2	0.0483	43.51	1.44	1 N h b	
209 2PBC J0407.9-1210	RBS 0511	BZU	61.959	-12.211	3.87	1.13	7.00 1.2 ± 0.7	0.41 ± 0.10	0.5740	46.23	1.89	3 Y h a b	
210 2PBC J0414.9-0755	1E 0412-0803	Sy1	63.741	-7.927	2.77	1.30	12.65 1.8 ± 0.6	0.28 ± 0.05	0.0379	43.78	1.61	3 Y h a b	
211 2PBC J0418.3+3801	3C 111	Sy1	64.586	38.019	1.46	0.46	46.35 10.6 ± 0.3	0.42 ± 0.01	0.0485	44.76	2.63	3 Y h a I b F	
212 2PBC J0419.7-5456	NGC 1566	Sy1	64.997	-54.929	3.12	0.54	10.19 1.8 ± 1.1	0.50 ± 0.07	0.0049	41.99	1.64	3 Y h a b	
213 2PBC J0422.4-5613	ESO 157- G 023	Sy2	65.612	-56.228	3.17	0.39	9.91 1.5 ± 0.8	0.47 ± 0.08	0.0432	43.80	1.71	1 Y h a	
214 2PBC J0423.6+0406	2MASX J04234080+0408017	Sy2	65.922	4.125	2.93	0.53	11.41 2.2 ± 0.8	0.33 ± 0.06	0.0461	44.03	1.54	3 Y h a I	
215 2PBC J0425.7-1945	V* IW Eri	CV*	66.426	-19.756	4.41	3.05	5.62 0.5 ± 1.7	< 0.1	...	...	1.78	2 N h b b	
216 2PBC J0425.9-5712	RBS 0542	QSO	66.502	-57.200	2.27	0.06	18.31 1.7 ± 0.5	0.27 ± 0.05	0.1040	44.71	2.01	3 Y h a b	
217 2PBC J0429.7-6703	1RXS J042948.9-670314	X	67.427	-67.063	4.51	0.82	5.41 0.7 ± 0.4	0.4 ± 0.2	...	...	1.42	3 N h b b	
218 2PBC J0429.8-2109	6dFGS gJ042938.3-210944	AGN	67.471	-21.154	4.56	3.50	5.30 0.7 ± 0.5	0.4 ± 0.2	0.0703	43.92	1.98	3 N h b f	
219 2PBC J0430.4-5334	RBS 0547	Sy1	67.585	-53.620	4.68	2.93	5.08 0.5 ± 0.4	0.3 ± 0.2	0.0397	43.28	1.63	3 Y h a b	
220 2PBC J0431.1-6126	ABELL 3266	CIG	67.823	-61.428	3.08	1.46	10.40 0.6 ± 0.3	< 0.09	0.0594	43.75	1.46	2 Y h a	
221 2PBC J0433.1+0521	3C 120	BZU	68.307	5.360	1.63	0.71	36.26 8.9 ± 0.4	0.41 ± 0.02	0.0331	44.35	1.62	1 Y h a I b	
222 2PBC J0436.3-1021	Mrk 618	Sy1	69.096	-10.371	3.43	0.37	8.63 1.6 ± 0.9	0.41 ± 0.08	0.0362	43.69	1.17	1 Y h a b	
223 2PBC J0437.8-4713	RBS 0560	Sy1	69.434	-47.206	3.96	2.99	6.74 0.8 ± 0.5	0.3 ± 0.1	0.0520	43.72	1.48	3 Y h a b	
224 2PBC J0438.2-1047	MCG -02-12-050	Sy1	69.566	-10.800	3.28	0.46	9.30 1.7 ± 1.0	0.46 ± 0.09	0.0359	43.69	1.44	1 Y h a b	
225 2PBC J0440.2-5937	ESO 118-33	Sy2	70.055	-59.710	4.28	2.41	5.89 1.0 ± 0.6	0.36 ± 0.10	0.0577	43.89	1.51	1 N h b f	
226 2PBC J0440.6-6507	...	...	70.169	-65.126	4.63	...	5.18 0.7 ± 0.4	0.3 ± 0.1	...	...	1.18	3 N h	
227 2PBC J0440.8+2739	1RXS J044046.9+273948	X	70.221	27.651	4.46	1.54	5.51 1.3 ± 0.8	0.4 ± 0.1	...	...	1.80	3 N h b b	
228 2PBC J0440.9+4432	RX J0440.9+4431	HXB	70.236	44.550	3.39	1.27	8.79 2.0 ± 1.1	0.37 ± 0.06	...	...	1.75	1 Y l a f	
229 2PBC J0441.3-2707	RBS 0572	Sy1	70.343	-27.099	4.20	2.38	6.09 0.9 ± 0.6	0.5 ± 0.1	0.0835	44.19	1.40	1 Y h a b	
230 2PBC J0441.9-0824	2MASX J04415408-0826339	Sy1	70.402	-8.384	4.79	5.58	4.89 0.7 ± 0.4	0.3 ± 0.2	0.0410	43.42	1.74	1 N h b b	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
231	2PBC J0443.7+2858	UGC 3142	70.950	28.974	2.58	0.27	14.34 4.0 ± 1.0	0.43 ± 0.04	0.0218	43.63	1.99	1 Y h a I	
232	2PBC J0444.0+2814	2MASX J04440903+2813003	71.012	28.227	2.33	1.49	17.42 5.0 ± 1.4	0.46 ± 0.03	0.0113	43.15	2.35	1 Y h a	
233	2PBC J0444.7-2810	RX J0444.6-2810	71.132	-28.178	3.11	1.53	10.22 1.7 ± 1.0	0.44 ± 0.07	0.1470	44.98	1.79	3 Y h a f	
234	2PBC J0446.2+1827	MCG+03-13-001	71.571	18.464	4.26	2.99	5.93 1.6 ± 1.0	0.40 ± 0.09	0.0155	42.94	1.80	1 N h b	
235	2PBC J0448.8-5741	ESO 119-8	72.218	-57.700	4.77	2.50	4.92 0.9 ± 0.6	0.6 ± 0.2	0.0232	43.03	1.62	1 N h b	
236	2PBC J0449.7+4503	4U 0446+44	72.447	45.062	4.64	3.63	5.14 0.5 ± 2.5	< 0.1	0.0210	42.72	1.59	2 N l a	
237	2PBC J0451.1-6948	PBCX J045106.7-694802	72.790	-69.801	2.23	0.24	19.03 2.8 ± 0.3	0.26 ± 0.03	...	...	2.10	2 N h a	
238	2PBC J0451.6-0347	MCG -01-13-025	72.894	-3.801	3.25	1.77	9.47 2.2 ± 1.2	0.48 ± 0.07	0.0130	42.91	1.49	1 Y h a b	
239	2PBC J0451.7-5811	RBS 0594	72.926	-58.196	2.91	0.84	11.51 1.9 ± 1.0	0.43 ± 0.06	0.0910	44.58	2.09	3 Y h a b	
240	2PBC J0452.0+4931	RX J0452.0+4932	73.002	49.539	2.11	0.79	21.07 5.2 ± 0.5	0.41 ± 0.03	0.0290	43.99	2.10	3 Y l a I b	
241	2PBC J0453.3+0404	2MASX J04532576+0403416	73.326	4.071	3.42	1.95	8.66 2.1 ± 1.1	0.31 ± 0.06	0.0296	43.63	1.87	1 Y h a I	
242	2PBC J0455.3+1737	...	73.834	17.633	4.83	...	4.82 0.9 ± 0.5	0.2 ± 0.1	...	...	1.36	2 N h	
243	2PBC J0455.9-7532	ESO 033- G 002	73.941	-75.537	2.73	0.89	12.97 1.6 ± 0.6	0.35 ± 0.06	0.0184	43.10	1.58	3 Y h a I b	
244	2PBC J0457.0+4525	1RXS J045707.4+452751	74.283	45.442	3.04	1.32	10.68 2.5 ± 0.8	0.31 ± 0.05	...	...	1.73	3 Y l a b	
245	2PBC J0459.8+2705	4C 27.14	74.963	27.087	3.80	1.37	7.21 1.9 ± 1.1	0.46 ± 0.09	...	...	1.75	1 N h a	
246	2PBC J0500.7-7041	IGR J05007-7047	75.244	-70.690	2.71	3.36	13.14 1.5 ± 0.5	0.16 ± 0.05	...	...	1.92	2 Y h a I	
247	2PBC J0502.3+0327	1E 0459.5+0327	75.578	3.523	4.13	2.47	6.26 1.3 ± 0.8	0.4 ± 0.1	0.0159	42.88	1.60	1 Y h a b	
248	2PBC J0502.4+2443	V* V1062 Tau	75.630	24.752	3.19	0.85	9.81 1.8 ± 0.9	0.11 ± 0.06	...	...	1.69	3 Y h a I	
249	2PBC J0503.0+2300	1RXS J050258.5+225949	75.736	23.032	4.11	2.09	6.31 2.0 ± 1.1	0.35 ± 0.07	0.0577	44.19	1.51	3 Y h a b	
250	2PBC J0504.2-7343	IGR J05053-7343	76.129	-73.733	4.26	3.51	5.95 0.8 ± 0.4	0.4 ± 0.1	...	...	1.66	1 N h b I	
		1RXS J050434.2-734902	X	...	...	5.05	...	...	...	...	...	...	...
251	2PBC J0505.4-6734	...	76.357	-67.579	4.78	...	4.91 0.7 ± 0.4	0.2 ± 0.1	...	...	1.52	3 N h	
252	2PBC J0505.7-2351	2MASX J05054575-2351139	76.444	-23.864	1.81	0.61	28.97 5.6 ± 0.6	0.46 ± 0.02	0.0350	44.19	1.54	1 Y h a I f	
253	2PBC J0506.6-1935	1RXS J050648.5-193651	76.696	-19.674	3.74	3.58	7.43 1.2 ± 0.8	0.40 ± 0.10	0.0900	44.39	2.08	3 Y h b b	
254	2PBC J0508.1+1724	2MASX J05081967+1721483	77.065	17.370	3.80	1.02	7.21 1.9 ± 1.1	0.32 ± 0.08	0.0177	43.13	1.81	3 Y h a b	
255	2PBC J0510.8+1629	4U 0517+17	77.692	16.493	1.88	0.38	26.63 7.0 ± 0.5	0.40 ± 0.02	0.0178	43.70	2.10	1 Y h a I b	
256	2PBC J0512.0-1831	ESO 553-22	78.011	-18.517	4.67	1.81	5.09 0.8 ± 0.5	0.5 ± 0.2	0.0421	43.50	1.62	1 N h a	
257	2PBC J0514.1-4002	1H 0512-401	78.539	-40.047	1.58	0.58	38.84 3.6 ± 0.3	0.18 ± 0.02	...	...	2.46	2 Y h a I b	
258	2PBC J0515.3+1856	...	78.837	18.938	4.13	...	6.27 1.7 ± 1.0	0.44 ± 0.10	...	...	1.73	3 N h	
259	2PBC J0516.1-0009	Mrk 1095	79.049	-0.156	1.93	0.33	25.20 5.9 ± 0.5	0.37 ± 0.02	0.0336	44.19	1.33	3 Y h a I	
260	2PBC J0516.3+1927	...	79.078	19.464	4.39	...	5.66 1.6 ± 1.0	0.4 ± 0.1	...	...	1.50	1 N h	
261	2PBC J0516.4-1034	MCG-02-14-009	79.114	-10.531	3.94	2.35	6.78 1.0 ± 0.6	0.2 ± 0.1	0.0280	43.25	1.40	2 Y h a b	
262	2PBC J0519.4-3240	ESO 362- G 018	79.888	-32.666	1.90	0.67	26.11 4.4 ± 0.5	0.44 ± 0.03	0.0126	43.20	1.66	1 Y h a I b	
263	2PBC J0519.8-4546	PICTOR A	79.953	-45.772	2.08	0.44	21.74 3.3 ± 0.6	0.42 ± 0.03	0.0342	43.95	1.48	3 Y h a I b	
264	2PBC J0520.4-7157	LMC X-2	80.062	-71.945	2.12	1.63	20.91 1.0 ± 0.6	< 0.04	...	...	1.68	2 Y h a b	
265	2PBC J0520.8-2522	2MASX J05210136-2521450	80.208	-25.368	4.86	2.61	5.25 0.9 ± 0.5	0.3 ± 0.1	0.0434	43.58	1.48	3 N h a f	
266	2PBC J0523.0-3626	RBS 0644	80.746	-36.459	2.38	0.23	16.74 2.6 ± 0.8	0.43 ± 0.04	0.0553	44.27	1.82	1 Y h a b F	
267	2PBC J0524.1-1211	LEDA 17233	81.049	-12.192	3.21	1.99	9.71 2.3 ± 0.7	0.38 ± 0.05	0.0491	44.11	1.21	3 Y h a	
268	2PBC J0525.4-4559	PKS 0524-460	81.307	-45.988	3.06	3.37	10.55 1.7 ± 1.0	0.55 ± 0.08	1.4790	47.17	1.35	1 Y h a f	
269	2PBC J0525.6+2413	RX J0525.3+2413	81.331	24.243	3.67	1.24	7.66 2.1 ± 1.2	0.29 ± 0.07	...	...	1.63	1 Y h a b	
270	2PBC J0526.2-2119	...	81.560	-21.328	4.50	...	5.43 0.9 ± 0.5	0.4 ± 0.1	...	...	1.59	3 N h	
271	2PBC J0529.3-3249	TV Col	82.348	-32.823	1.48	0.53	44.87 5.5 ± 0.2	0.19 ± 0.01	...	...	2.23	2 Y h a I b	
272	2PBC J0529.8-6602	GSC 08891-00213	82.462	-66.041	4.82	5.74	4.84 0.8 ± 0.4	< 0.10	...	...	2.03	2 N l b I	
		1RXS J053043.4-655846	gam	...	...	6.48	...	...	...	...	...	...	...
273	2PBC J0530.9+1333	PKS 0528+134	82.755	13.562	4.18	2.12	6.13 1.8 ± 1.2	0.5 ± 0.1	2.0700	47.45	1.57	1 Y h a b F	
274	2PBC J0532.7+1346	1RXS J053257.3+134508	83.197	13.778	4.69	2.88	5.05 0.8 ± 0.5	0.4 ± 0.2	...	...	1.85	3 N h b b	
275	2PBC J0532.7-6621	LMC X-4	83.198	-66.367	0.82	0.32	269.22 28.4 ± 0.2	0.158 ± 0.003	...	...	64.63	3 Y h a I	
276	2PBC J0533.8-1320	...	83.468	-13.345	4.19	...	6.12 1.5 ± 0.9	0.5 ± 0.1	...	...	1.65	1 N h	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
277	2PBC J0534.5+2201	Crab	83.635	22.013	0.58	0.13	4324.97	2106.6 ± 0.5	0.3691 ± 0.0001	...	...	1.97	1 Y h a I F
278	2PBC J0534.7-5800	TRW Pic	83.700	-58.006	2.46	1.35	15.76	1.4 ± 0.5	0.16 ± 0.05	...	...	1.74	2 Y h a I b
279	2PBC J0535.1-0522	Trapezium Cluster	83.794	-5.372	4.64	1.70	5.15	0.4 ± 1.3	< 0.2	...	...	1.62	2 N h a b
280	2PBC J0535.6+4011	IRAS 05320+4009	83.909	40.189	4.90	1.12	5.17	1.1 ± 0.7	0.5 ± 0.2	...	...	1.62	1 N l a b
281	2PBC J0537.7+2106	...	84.425	21.107	4.18	...	6.13	1.9 ± 1.1	0.17 ± 0.06	...	...	2.30	2 N h
282	2PBC J0538.9+2618	1A 0535+262	84.724	26.318	0.94	0.20	159.46	36.1 ± 0.4	0.229 ± 0.003	...	...	28.58	3 Y l a I b
283	2PBC J0538.9-6404	LMC X-3	84.731	-64.073	2.40	0.56	16.45	2.1 ± 0.3	0.37 ± 0.04	...	...	2.92	1 Y h a b
284	2PBC J0538.9-4406	PKS 0537-441	84.751	-44.105	4.37	2.09	5.70	1.0 ± 0.7	0.4 ± 0.1	0.8960	46.56	1.74	1 Y h a b F	
285	2PBC J0539.8-6943	LMC X-1	84.888	-69.703	2.02	2.44	23.15	2.8 ± 0.3	0.27 ± 0.03	...	...	2.53	2 Y h a I
286	2PBC J0540.0-6921	PSR B0540-69.3	84.934	-69.386	1.98	3.69	23.89	3.7 ± 0.6	0.44 ± 0.03	...	...	2.02	3 Y h a I
287	2PBC J0539.8-2839	PKS 0537-286	84.952	-28.645	2.66	1.76	13.62	2.7 ± 1.6	0.50 ± 0.05	3.1040	48.10	1.47	3 Y h a b F	
288	2PBC J0541.4-6825	XMMU J054134.7-682550	85.381	-68.406	1.75	1.48	31.13	2.7 ± 0.3	0.07 ± 0.02	...	...	9.46	2 Y h a
289	2PBC J0542.7+6052	BY Cam	85.736	60.849	2.21	1.11	19.33	2.7 ± 0.5	0.21 ± 0.03	...	...	1.70	3 Y h a I b
290	2PBC J0543.4-4102	TX Col	85.827	-41.029	2.80	0.36	12.34	1.2 ± 0.6	0.10 ± 0.06	...	...	1.69	2 Y h a b
291	2PBC J0543.6-2738	MCG -05-14-012	85.888	-27.634	2.89	1.01	11.67	1.9 ± 1.0	0.41 ± 0.06	0.0099	42.62	1.50	3 Y h a f	
292	2PBC J0543.9-4325	PBCX J054400.2-432526	85.990	-43.420	4.61	0.53	5.21	0.8 ± 0.5	0.4 ± 0.1	...	...	1.61	1 N h a
293	2PBC J0544.3+5905	2MASX J05442257+5907361	86.083	59.134	2.80	1.11	12.35	2.7 ± 1.6	0.50 ± 0.06	...	...	1.22	1 Y h a
294	2PBC J0545.1+6102	...	86.281	61.038	5.07	...	4.89	0.6 ± 0.3	0.2 ± 0.2	...	...	1.49	3 N h
295	2PBC J0547.3+5040	2MASX J05471492+5038251	86.848	50.667	3.45	2.10	8.54	1.5 ± 0.9	0.35 ± 0.08	0.0366	43.68	1.49	3 N h a	
296	2PBC J0550.7-3215	PKS 0548-322	87.675	-32.276	2.29	0.40	18.01	2.6 ± 0.5	0.35 ± 0.04	0.0689	44.49	1.79	3 Y h a b	
297	2PBC J0550.7-2304	1RXS J055040.0-231112	87.677	-23.078	4.01	6.51	6.59	1.1 ± 0.7	0.5 ± 0.1	...	...	1.64	3 N l b b
298	2PBC J0552.1+5927	1RXS J055229.5+592842	88.023	59.457	3.34	3.30	9.02	1.5 ± 0.8	0.34 ± 0.08	0.0500	43.94	1.14	1 Y h a b	
299	2PBC J0552.1-0727	NGC 2110	88.040	-7.463	1.05	0.58	109.33	25.9 ± 0.4	0.449 ± 0.006	0.0075	43.51	5.21	1 Y h a I f	
300	2PBC J0554.8+4626	4U 0558+46	88.717	46.447	1.38	0.53	53.22	11.1 ± 0.3	0.39 ± 0.01	0.0204	44.02	2.69	3 Y h a I b	
301	2PBC J0555.9+3948	OA 198	88.919	39.761	4.86	3.65	5.25	1.2 ± 0.7	0.4 ± 0.1	2.3630	47.68	1.41	1 Y h a f	
302	2PBC J0558.0+5353	V405 Aur	89.494	53.893	2.13	0.49	20.76	3.5 ± 0.3	0.20 ± 0.03	...	...	1.60	2 Y h a b
303	2PBC J0558.0-3821	H 0557-385	89.521	-38.356	2.14	1.45	20.56	3.1 ± 0.3	0.30 ± 0.03	0.0339	43.91	1.55	3 Y h a I b	
304	2PBC J0559.7-1930	...	89.947	-19.513	4.75	...	4.95	0.7 ± 0.4	0.5 ± 0.2	...	...	1.34	1 N h
305	2PBC J0559.6-5028	1ES 0558-504	89.951	-50.445	3.17	0.20	9.90	1.2 ± 0.7	0.38 ± 0.08	0.1370	44.80	1.37	1 Y h a b	
306	2PBC J0600.7+0008	...	90.178	0.134	4.91	...	5.17	1.0 ± 0.6	0.2 ± 0.1	...	...	1.23	2 N h
307	2PBC J0600.8-2611	1RXS J060105.8-261111	90.214	-26.193	4.77	3.27	4.92	0.7 ± 0.4	0.3 ± 0.1	...	...	1.60	3 N h b b
308	2PBC J0602.0+2828	IRAS 05589+2828	90.551	28.468	2.16	0.61	20.14	4.9 ± 0.5	0.34 ± 0.03	0.0330	44.09	1.98	3 Y l a I b	
309	2PBC J0602.5+6522	MCG+11-08-008	90.628	65.383	4.06	1.02	6.44	1.6 ± 1.0	0.53 ± 0.10	0.0154	42.93	1.51	3 N h a	
310	2PBC J0605.8-2754	1RXS J060548.1-275439	91.471	-27.915	3.87	1.13	7.00	1.0 ± 0.6	0.4 ± 0.1	...	...	1.83	3 N h a b
311	2PBC J0606.0-8636	ESO 5-4	91.795	-86.587	2.79	2.99	12.46	2.2 ± 1.3	0.49 ± 0.06	0.0063	42.30	1.40	3 Y h a I	
312	2PBC J0608.0+5749	...	92.020	57.822	4.91	...	5.16	1.0 ± 0.6	0.4 ± 0.2	...	...	1.42	1 N h
313	2PBC J0609.4-6243	1RXS J061006.6-624311	92.363	-62.717	4.59	4.54	5.25	0.7 ± 0.5	0.4 ± 0.1	...	...	1.66	1 N l b b
314	2PBC J0611.9-4644	...	92.989	-46.749	4.48	...	5.46	0.4 ± 0.8	< 0.2	...	...	1.46	2 N h
315	2PBC J0615.7+7100	Mrk 3	93.896	71.038	1.32	0.11	59.64	11.8 ± 0.3	0.48 ± 0.01	0.0134	43.67	2.56	1 Y h a I b	
316	2PBC J0617.1+0907	H 0614+091	94.282	9.125	0.93	0.73	163.48	41.5 ± 0.4	0.295 ± 0.003	...	...	9.88	2 Y l a I b
317	2PBC J0619.8-2324	...	94.960	-23.413	4.82	...	4.84	0.5 ± 0.3	< 0.2	...	...	1.57	3 N h
318	2PBC J0620.8-2932	...	95.220	-29.543	4.82	...	4.84	0.4 ± 0.2	0.1 ± 0.1	...	...	1.15	2 N h
319	2PBC J0623.7-6435	RX J062308.0-643619	95.842	-64.595	3.46	1.54	8.48	1.3 ± 0.8	0.50 ± 0.09	0.1290	44.73	1.72	1 Y h a b	
320	2PBC J0623.8-3212	ESO 426- G 002	95.953	-32.244	2.52	1.72	15.08	2.4 ± 1.3	0.45 ± 0.06	0.0224	43.42	1.83	3 Y h a	
321	2PBC J0623.8-6059	ESO 121-IG 028	95.977	-60.989	2.63	1.25	13.84	2.3 ± 1.1	0.43 ± 0.05	0.0411	43.95	1.50	3 N h b I	
322	2PBC J0625.1+6450	...	96.289	64.850	4.88	...	5.21	0.8 ± 0.5	0.4 ± 0.2	...	...	1.61	3 N h
323	2PBC J0625.2+7336	IGR J06253+7334	96.296	73.605	2.55	0.79	14.75	1.4 ± 0.7	< 0.06	...	...	1.67	2 Y h a I
324	2PBC J0626.5-3701	...	96.630	-37.025	4.10	...	6.34	1.2 ± 0.8	0.5 ± 0.1	...	...	1.22	1 N h

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
325 2PBC J0626.6+0728	...	...	96.665	7.483	4.28	...	5.90 1.7 ± 1.1	0.5 ± 0.1	...	...	1.64	3 N I	
326 2PBC J0629.2-2456	...	...	97.306	-24.948	4.80	...	4.87 0.4 ± 2.1	< 0.2	...	...	1.41	3 N h	
327 2PBC J0630.9+6340	2MASX J06302561+6340411	Sy2	97.613	63.650	4.89	1.59	5.20 1.2 ± 0.7	0.39 ± 0.10	0.0413	43.67	1.17	2 Y h a	
328 2PBC J0632.6+6342	UGC 3478	BZQ	97.946	63.656	3.26	6.71	9.41 1.3 ± 0.7	0.36 ± 0.09	0.0124	42.65	1.69	3 Y h a	b
329 2PBC J0632.0-5403	1ES 0630-540	BLA	98.030	-54.025	3.82	3.21	7.15 0.8 ± 0.5	0.2 ± 0.1	0.1930	44.97	1.86	2 Y h a	
330 2PBC J0634.9+2231	CIZA J0635.0+2231	CIG	98.729	22.527	4.47	1.94	5.47 0.8 ± 0.5	0.3 ± 0.1	0.0680	43.98	1.71	2 N h a	b
331 2PBC J0635.0-7441	1RXS J063401.1-744629	X	98.760	-74.687	4.67	6.63	5.09 0.7 ± 0.5	0.4 ± 0.2	...	...	1.32	1 N I b	b
332 2PBC J0635.4-7514	PKS 0637-752	BZQ	99.081	-75.245	3.66	2.62	7.69 1.0 ± 0.6	0.4 ± 0.1	0.6510	46.30	1.66	1 Y h a	I b F
333 2PBC J0636.4-2037	2MASX J06363227-2034532	Sy2	99.101	-20.620	4.77	2.97	4.93 1.0 ± 0.7	0.5 ± 0.2	0.0551	43.86	1.59	1 N h b	
334 2PBC J0636.6+3535	1RXS J063631.9+353573	CV*	99.136	35.604	3.55	0.63	8.12 1.3 ± 0.7	0.22 ± 0.08	...	...	1.47	3 N h b	b
335 2PBC J0640.1-4740	...	...	100.041	-47.673	4.30	...	5.84 0.9 ± 0.6	0.4 ± 0.1	...	...	2.04	3 N h	
336 2PBC J0640.2-1408	...	...	100.062	-14.139	4.76	...	4.94 1.1 ± 0.8	0.6 ± 0.2	...	...	1.37	1 N h	
337 2PBC J0640.2-2554	ESO 490-IG026	Sy1	100.064	-25.908	2.27	1.16	18.38 3.2 ± 0.4	0.39 ± 0.04	0.0258	43.69	1.47	3 Y h a	I b
338 2PBC J0640.5-4322	2MASX J06403799-4321211	Sy2	100.153	-43.344	3.41	0.73	8.72 1.6 ± 1.0	0.52 ± 0.09	0.0610	44.13	1.43	3 Y h a	
339 2PBC J0641.3+3251	2MASX J06411806+3249313	G	100.332	32.824	2.66	0.34	13.55 3.1 ± 1.8	0.49 ± 0.05	0.0470	44.20	1.61	1 Y h a	
340 2PBC J0650.3-3805	6dFGS gJ065017.5-380514	G	102.583	-38.088	4.82	0.49	4.83 0.7 ± 0.4	0.4 ± 0.2	0.0300	43.18	1.50	3 N h a	b
341 2PBC J0652.1+7425	Mrk 6	Sy1	103.025	74.428	1.89	0.42	26.39 4.9 ± 0.4	0.40 ± 0.02	0.0186	43.58	1.74	3 Y h a	I b
342 2PBC J0653.1-1227	...	...	103.293	-12.461	4.79	...	4.89 0.8 ± 0.4	0.3 ± 0.2	...	...	1.35	1 N h	
343 2PBC J0654.5+0703	RX J0654.5+0703	X	103.631	7.058	4.76	0.70	4.94 1.0 ± 0.7	0.4 ± 0.2	...	...	1.40	1 N I a	b
344 2PBC J0655.5-2752	...	...	103.880	-27.869	5.05	...	4.93 0.5 ± 0.3	< 0.2	...	...	1.85	2 N h	
345 2PBC J0655.8+3958	UGC 03601	Sy1	103.952	40.003	2.77	0.25	12.65 2.6 ± 0.6	0.39 ± 0.05	0.0172	43.23	1.30	1 Y h a	b
346 2PBC J0656.6-6534	FRL 265	Sy1	104.170	-65.582	4.74	1.71	4.97 0.4 ± 0.3	0.3 ± 0.1	0.0304	42.95	1.50	1 N h b	b
347 2PBC J0658.0-1746	1RXS J065806.3-174427	X	104.518	-17.773	4.74	1.93	4.97 0.8 ± 0.4	0.2 ± 0.1	...	...	1.62	2 N h a	b
348 2PBC J0658.4-5553	RX J0658.4-5557	CIG	104.562	-55.906	4.63	2.97	5.17 0.3 ± 3.7	< 0.2	0.2960	45.16	1.53	1 Y h a	b
349 2PBC J0658.3-0712	2E 0655.8-0708	HXB	104.568	-7.218	1.22	0.45	73.02 9.3 ± 0.3	0.124 ± 0.009	...	...	26.34	2 Y I a	I f
350 2PBC J0704.7+2627	...	...	106.179	26.463	4.84	...	4.80 1.0 ± 0.7	0.6 ± 0.2	...	...	1.62	1 N h	
351 2PBC J0706.7+0327	1RXS J070648.8+032450	X	106.686	3.451	4.65	2.43	5.13 0.8 ± 0.4	0.2 ± 0.1	...	...	1.18	2 N I b	b
352 2PBC J0707.4+6435	2MASX J07071310+6435587	Sy1	106.867	64.591	4.57	1.68	5.28 1.1 ± 0.7	0.5 ± 0.1	0.0795	44.22	1.42	3 N h a	b
353 2PBC J0708.8-4642	6dFGS gJ070843.3-464249	G	107.213	-46.713	4.39	1.34	5.66 0.8 ± 0.5	0.4 ± 0.1	0.0469	43.61	1.80	3 N h a	
354 2PBC J0709.2-3601	PKS 0707-35	G	107.345	-36.029	2.95	1.80	11.28 2.1 ± 1.3	0.51 ± 0.07	0.1108	44.80	1.74	1 Y h a	
355 2PBC J0709.5-3538	...	...	107.383	-35.643	4.78	...	4.91 0.8 ± 0.5	0.3 ± 0.1	...	...	1.70	1 N h	
356 2PBC J0710.2+5909	1H 0658+595	BZB	107.664	59.149	2.80	1.33	12.36 1.8 ± 0.5	0.29 ± 0.05	0.1250	44.89	1.75	2 Y h a	b F
357 2PBC J0712.1+1540	1RXS J071215.9+153930	X	108.042	15.670	4.73	1.55	4.99 0.9 ± 0.6	0.4 ± 0.2	0.1656	44.84	1.54	1 N h b	b
358 2PBC J0713.6+3825	FIRST J071340.2+382040	Sy1	108.402	38.419	4.77	4.52	4.92 0.6 ± 0.3	0.3 ± 0.2	0.1200	44.36	1.67	1 N I b	b
359 2PBC J0714.0+3519	MCG+06-16-028	Sy2	108.509	35.331	4.84	3.14	5.28 1.1 ± 0.7	0.5 ± 0.2	0.0157	42.79	1.35	3 N h b	f
360 2PBC J0714.6-2521	...	...	108.663	-25.355	4.17	...	6.15 0.9 ± 0.6	0.4 ± 0.1	...	...	1.99	3 N h	
361 2PBC J0717.8-2156	...	...	109.455	-21.944	4.57	...	5.28 0.6 ± 0.4	0.2 ± 0.1	...	...	1.55	2 N I	
362 2PBC J0717.9+4405	RX J0718.0+4405	Sy1	109.498	44.101	2.47	0.61	15.61 2.6 ± 0.5	0.37 ± 0.05	0.0610	44.36	1.57	3 Y h a	b
363 2PBC J0726.5-3553	LEDA 96373	Sy2	111.620	-35.895	3.17	0.83	9.91 2.1 ± 1.3	0.49 ± 0.07	0.0296	43.63	1.52	1 Y h a	I
364 2PBC J0726.6+3700	1RXS J072635.3+370006	QSO	111.659	37.001	4.33	0.58	5.77 1.1 ± 0.6	0.3 ± 0.1	0.1900	45.08	1.68	1 Y h a	b
365 2PBC J0727.3-2404	1RXS J072720.8-240629	Sy1	111.846	-24.119	2.83	0.79	12.10 1.6 ± 0.9	0.45 ± 0.09	0.1230	44.78	1.37	1 Y I a	f
366 2PBC J0728.9-2605	3A 0726-260	HXB	112.231	-26.092	2.28	1.02	18.10 2.1 ± 0.6	0.10 ± 0.04	...	...	2.81	2 Y I a	b
367 2PBC J0729.2+4008	2MASX J07290876+4008361	Sy1	112.302	40.140	4.80	0.77	4.87 1.0 ± 0.7	0.6 ± 0.2	0.0740	44.12	1.59	3 N h b	b
368 2PBC J0730.4-1142	PG 0727-11	BZQ	112.606	-11.713	4.51	2.22	5.40 1.0 ± 0.6	0.4 ± 0.1	1.5910	47.26	1.51	3 N I a	F
369 2PBC J0731.5+0955	BG CMi	DQ*	112.884	9.934	2.37	0.86	16.89 2.5 ± 0.9	0.17 ± 0.04	...	...	1.52	2 Y h a	
370 2PBC J0732.6-1331	SWIFT J0732.5-1331	CV*	113.154	-13.504	2.39	0.81	16.54 2.6 ± 0.7	0.24 ± 0.04	...	...	1.24	1 Y I a	I b
371 2PBC J0739.6-3143	SWIFT J0739.7-3144	Sy2	114.930	-31.726	2.44	1.64	15.92 2.3 ± 0.8	0.39 ± 0.05	0.0260	43.55	2.03	1 Y I a	
372 2PBC J0741.7-6726	...	...	115.426	-67.444	4.82	...	4.84 0.5 ± 0.3	0.2 ± 0.2	...	...	1.49	3 N h	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
373 2PBC J0742.0+8024	3C 184.1	Sy1	115.514	80.412	4.65	2.90	5.13	0.8 ± 0.5	0.5 ± 0.2	0.1182	44.43	1.32	1 N h a	
374 2PBC J0742.4+4948	Mrk 79	Sy1	115.613	49.799	1.95	1.11	24.71	4.4 ± 0.4	0.40 ± 0.03	0.0220	43.68	1.68	1 Y h a	b
375 2PBC J0743.0+6511	Mrk 78	Sy1	115.751	65.185	4.33	1.99	5.79	1.0 ± 0.6	0.4 ± 0.1	0.0380	43.53	1.94	1 N h a	
376 2PBC J0743.1-2546	2MASX J07431472-2545501	Sy1	115.803	-25.767	2.72	0.49	13.07	2.2 ± 1.2	0.41 ± 0.06	0.0230	43.42	1.63	1 Y l a	b
377 2PBC J0744.1+2915	MCG+05-19-001	Sy2	116.053	29.261	3.13	1.14	10.13	1.8 ± 1.1	0.51 ± 0.09	0.0159	43.00	1.55	1 N h b	
	LEDA 93091	GiG				1.46				0.0158	43.00			
378 2PBC J0744.7-2348	...	...	116.195	-23.812	4.64	...	5.15	1.1 ± 0.6	0.4 ± 0.1	...	...	1.69	1 N l	
379 2PBC J0745.0-5258	V* V436 Car	DQ*	116.260	-52.965	3.80	0.94	7.23	0.6 ± 0.3	< 0.1	...	...	1.59	2 Y h a	b
380 2PBC J0746.2-1610	1RXS J074616.8-161127	X	116.566	-16.171	4.23	1.23	6.02	0.9 ± 0.5	< 0.1	...	...	1.59	2 N l a	b
381 2PBC J0746.4+2548	87GB 074322.5+255639	BZQ	116.609	25.812	2.31	0.33	17.74	4.5 ± 2.7	0.57 ± 0.04	2.9793	48.10	1.57	1 Y h a	f F
382 2PBC J0747.4+6055	Mrk 10	Sy1	116.890	60.927	3.16	0.68	9.95	1.7 ± 0.8	0.35 ± 0.06	0.0292	43.52	1.85	1 Y h a	b
383 2PBC J0747.5-1920	4U 0739-19	CIG	116.892	-19.326	3.35	1.97	9.00	0.9 ± 0.5	0.10 ± 0.08	0.1028	44.46	1.41	2 Y l a	b
384 2PBC J0747.7-7326	2MASX J07473839-7325533	G	116.945	-73.437	3.92	0.69	6.85	1.2 ± 0.7	0.44 ± 0.10	...	...	1.48	3 N h a	
385 2PBC J0748.6-6744	EXO 0748-676	LXB	117.146	-67.756	0.89	0.22	190.47	25.6 ± 0.3	0.340 ± 0.004	...	...	29.45	3 Y h a	I b
386 2PBC J0749.2-8634	1RXS J075044.0-863217	X	117.322	-86.576	4.81	2.59	4.86	0.7 ± 0.5	0.6 ± 0.2	...	...	1.42	1 N h b	b
387 2PBC J0750.4+7237	...	...	117.613	72.624	4.87	...	5.22	0.8 ± 0.5	0.4 ± 0.1	...	...	1.40	3 N h	
388 2PBC J0750.6+1231	OI +280	BZQ	117.666	12.521	3.96	2.97	6.71	1.5 ± 1.0	0.6 ± 0.1	0.8890	46.48	1.28	1 Y h a	F
389 2PBC J0750.6+0320	2MASX J07510082+0320401	Sy1	117.672	3.336	4.71	4.84	5.02	0.9 ± 0.5	0.4 ± 0.2	0.0989	44.34	1.50	3 N h a	
390 2PBC J0751.2+1445	SWIFT J0750.9+1439	DQ*	117.803	14.741	2.15	1.15	20.42	2.9 ± 0.5	0.18 ± 0.03	...	...	1.61	2 Y h a	b
391 2PBC J0751.6+6450	...	...	117.917	64.839	4.92	...	5.15	0.6 ± 0.4	0.5 ± 0.2	...	...	1.45	3 N h	
392 2PBC J0752.1+1935	2MASX J07521780+1935423	Sy1	118.064	19.598	4.05	0.61	6.47	1.5 ± 0.8	0.29 ± 0.08	0.1172	44.73	1.68	1 Y h a	f
393 2PBC J0752.9+4557	1RXS J075243.6+455653	Sy1	118.231	45.968	3.52	2.26	8.23	1.4 ± 0.9	0.51 ± 0.10	0.0600	44.08	1.45	1 Y h a	b
394 2PBC J0756.4-4137	2MASX J07561963-4137420	Sy2	119.102	-41.626	4.49	0.93	5.44	0.9 ± 0.6	0.4 ± 0.1	0.0210	42.93	1.73	2 N h a	I f
395 2PBC J0757.9+0113	...	...	119.498	1.227	4.96	...	5.08	1.0 ± 0.6	0.4 ± 0.1	...	...	1.44	1 N h	
396 2PBC J0759.7-3844	IGR J07597-3842	Sy1	119.932	-38.740	1.82	0.58	28.54	4.7 ± 0.4	0.38 ± 0.02	0.0400	44.24	1.91	3 Y l a	I
397 2PBC J0759.9+2324	MCG +04-19-017	Sy2	119.975	23.421	2.66	1.84	13.58	3.0 ± 1.6	0.46 ± 0.05	0.0296	43.77	1.50	1 Y h a	
398 2PBC J0800.2+2637	IC 486	Sy1	120.066	26.628	2.80	1.39	12.34	2.8 ± 1.5	0.45 ± 0.05	0.0272	43.66	1.87	1 Y h a	b
399 2PBC J0800.5-4306	...	...	120.145	-43.117	5.08	...	4.88	0.8 ± 0.5	0.4 ± 0.1	...	...	1.31	3 N h	
400 2PBC J0801.2-4625	1RXS J080114.6-462324	X	120.325	-46.418	4.94	1.79	5.10	0.7 ± 0.5	0.4 ± 0.1	...	...	1.31	1 N h a	I f
401 2PBC J0802.0-4946	ESO 209-12	Sy1	120.490	-49.781	2.73	0.14	12.97	2.2 ± 0.6	0.39 ± 0.05	0.0395	43.90	1.11	3 Y h a	I b
402 2PBC J0803.4+0840	...	...	120.859	8.680	4.04	...	6.49	1.4 ± 0.8	0.35 ± 0.09	...	...	1.61	3 N h	
403 2PBC J0804.0+0506	Mrk 1210	Sy2	121.020	5.111	1.99	0.29	23.87	5.0 ± 0.4	0.41 ± 0.03	0.0135	43.31	1.58	1 Y h a	f
404 2PBC J0804.6-2748	[CGI2005] 13	XB*	121.150	-27.804	4.37	3.55	5.70	0.7 ± 0.4	0.4 ± 0.2	...	...	1.71	3 N l b	b
405 2PBC J0804.7+1048	MCG+02-21-013	Sy2	121.151	10.763	4.17	2.63	6.15	1.7 ± 1.0	0.40 ± 0.08	0.0343	43.66	1.48	2 N h b	
406 2PBC J0805.4+6146	GB6 J0805+6144	BZQ	121.314	61.738	3.31	0.35	9.18	1.5 ± 0.9	0.48 ± 0.09	3.0400	47.78	1.67	1 Y h a	f F
407 2PBC J0811.3+7601	RBS 0693	Sy1	122.794	76.043	2.93	0.73	11.39	1.1 ± 0.6	0.26 ± 0.08	0.1000	44.48	1.23	3 Y h a	I b
408 2PBC J0812.3-4003	...	...	123.086	-40.051	4.80	...	4.86	0.9 ± 0.6	0.5 ± 0.2	...	...	1.93	3 N l	
409 2PBC J0812.8+6233	V* SU UMa	DN*	123.225	62.564	4.96	3.88	5.08	0.1 ± 0.1	< 0.7	...	...	1.34	2 N h a	b
410 2PBC J0814.4+0421	2MASX J08142529+0420324	Sy1	123.600	4.366	3.38	1.60	8.84	2.0 ± 1.2	0.43 ± 0.07	0.0330	43.70	1.29	1 Y h a	
411 2PBC J0816.8+1800	2MASX J08165108+1802496	Sy1	124.215	18.019	4.69	1.72	5.06	0.8 ± 0.5	0.3 ± 0.1	0.1580	44.76	1.34	3 N h b	b
412 2PBC J0817.4-0733	ACO 644	CIG	124.368	-7.563	4.67	3.16	5.10	0.4 ± 1.9	< 0.2	0.0704	43.73	1.44	2 N h a	b
413 2PBC J0818.1+0121	1RXS J081815.0+012215	Sy1	124.550	1.353	4.54	1.43	5.34	1.9 ± 1.1	0.52 ± 0.09	0.0800	44.45	1.53	3 Y h a	b
414 2PBC J0818.5-1420	1RXS J081820.4-142555	X	124.646	-14.345	4.97	6.30	5.07	0.7 ± 0.4	0.3 ± 0.2	...	...	1.43	3 N l b	b
415 2PBC J0818.9-2252	2MASX J08185772-2252364	Sy1	124.731	-22.875	4.39	0.55	5.64	1.1 ± 0.7	0.5 ± 0.1	0.0350	43.50	1.64	1 N h a	b
416 2PBC J0819.2-2508	1RXS J081915.0-251106	X	124.816	-25.147	4.99	2.27	5.02	0.7 ± 0.4	0.2 ± 0.1	0.0055	41.67	1.50	3 N h b	b
417 2PBC J0819.4+4524	...	...	124.874	45.401	5.06	...	4.92	0.6 ± 0.3	0.2 ± 0.2	...	...	1.40	2 N h	
418 2PBC J0820.4-2801	1RXS J082033.6-280457	X	125.122	-28.032	4.23	3.17	6.01	1.0 ± 0.5	0.3 ± 0.1	...	...	1.49	2 N l a	b
419 2PBC J0823.0-0454	FAIRALL 0272	G	125.754	-4.932	2.28	0.14	18.20	3.8 ± 2.2	0.57 ± 0.05	0.0218	43.60	1.88	1 Y h a	

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Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
420 2PBC J0825.4+7306	V* Z Cam	CV*	126.364	73.111	4.98	1.01	5.05	0.5 ± 0.3	0.2 ± 0.2	...	...	1.27	2 N h a b	
421 2PBC J0826.3-7033	1ES 0826-703	X	126.573	-70.560	3.30	1.97	9.20	0.8 ± 0.5	0.1 ± 0.1	...	...	1.39	3 Y h a b	
422 2PBC J0829.8+4154	2MASX J08294266+4154366	Sy1	127.453	41.912	4.47	1.12	5.48	0.9 ± 0.5	0.4 ± 0.1	0.1260	44.55	1.81	1 N h b	
423 2PBC J0829.9-6725	1RXS J083017.0-672520	X	127.485	-67.429	4.39	2.00	5.65	0.6 ± 0.4	0.2 ± 0.2	0.0347	43.25	1.38	3 N h b b	
424 2PBC J0832.6+3706	RBS 707	Sy1	128.143	37.131	2.96	1.80	11.21	1.7 ± 1.0	0.44 ± 0.07	0.0920	44.55	1.56	1 Y h a b	
425 2PBC J0833.0+2842	2MASX J08330461+2849225	Sy1	128.268	28.714	4.67	6.53	5.10	0.9 ± 0.6	0.5 ± 0.2	0.1742	44.84	1.77	3 N h b	
426 2PBC J0834.5+0601	2MASX J08342927+0603249	Sy1	128.633	6.033	4.43	1.58	5.57	1.2 ± 0.7	0.5 ± 0.1	0.1100	44.55	1.29	1 N h b f	
427 2PBC J0835.3-4511	Vela Pulsar	Psr	128.844	-45.183	1.18	0.49	79.29	14.9 ± 0.3	0.407 ± 0.008	...	...	2.00	3 Y l a I F	
428 2PBC J0838.3+4837	EI UMa	DN*	129.598	48.638	2.06	0.31	22.22	2.7 ± 0.3	0.23 ± 0.03	...	...	1.40	2 Y h a b	
429 2PBC J0838.4-3558	FAIRALL 1146	Sy1	129.635	-35.990	2.24	0.38	18.85	2.9 ± 0.4	0.32 ± 0.04	0.0317	43.83	1.95	3 Y l a I b	
430 2PBC J0838.7+2612	2MASX J08385930+2608129	EmG	129.688	26.216	4.68	5.81	5.08	1.0 ± 0.6	0.4 ± 0.1	0.0480	43.72	1.18	3 N h a	
431 2PBC J0838.6-4831	USNO-B1.0 0414-00125587	CV*	129.694	-48.530	3.34	0.59	9.03	1.7 ± 0.7	0.33 ± 0.06	...	...	1.83	1 Y l a I	
432 2PBC J0839.7-1214	3C 206	Sy1	129.939	-12.241	2.70	1.25	13.20	2.3 ± 0.7	0.39 ± 0.05	0.1978	45.42	1.24	1 Y h a b	
433 2PBC J0840.0+2948	4C 29.30	Sy2	130.020	29.789	4.10	1.78	6.35	1.5 ± 0.9	0.47 ± 0.09	0.0647	44.18	1.64	3 Y h a	
434 2PBC J0841.4+7053	S5 0836+71	BZQ	130.396	70.890	1.73	0.91	31.66	5.9 ± 1.1	0.51 ± 0.02	2.2180	48.13	1.64	1 Y h a I b F	
435 2PBC J0842.2+0759	1RXS J084206.6+075936	Sy1	130.528	7.982	3.93	0.65	6.81	1.5 ± 0.9	0.5 ± 0.1	0.1300	44.81	1.77	1 N h b b	
436 2PBC J0843.6+3553	2MASX J08434495+3549421	Sy2	130.894	35.844	4.45	2.32	5.52	1.1 ± 0.6	0.34 ± 0.09	0.0535	43.87	1.76	1 N h b	
437 2PBC J0845.2-3530	SWIFT J0845.0-3531	X	131.331	-35.514	3.22	0.50	9.64	1.3 ± 0.7	0.37 ± 0.10	...	...	1.53	1 Y l a b	
438 2PBC J0845.3+1421	2MASX J08451850+1420345	G	131.332	14.353	3.54	0.64	8.15	1.3 ± 0.7	0.30 ± 0.08	...	...	1.24	1 N h a	
439 2PBC J0845.3-5227	1RXS J084539.5-522556	X	131.348	-52.460	4.81	2.94	4.85	0.5 ± 0.3	< 0.2	...	...	1.68	3 N h b b	
440 2PBC J0848.2+3443	RBS 724	Sy1	132.052	34.728	4.77	6.34	4.92	0.4 ± 0.4	< 0.2	0.0640	43.60	1.64	2 N h a b	
441 2PBC J0849.2-5544	2MASX J08491503-5546075	Sy1	132.309	-55.743	4.84	1.55	5.28	0.7 ± 0.5	0.4 ± 0.1	0.0658	43.88	1.61	1 N h b	
442 2PBC J0852.0+0750	2E 0849.5+0805	Sy1	133.008	7.843	5.02	4.42	4.97	0.8 ± 0.5	0.4 ± 0.2	0.0630	43.86	1.39	3 N h a b	
443 2PBC J0854.3-0826	...	...	133.590	-8.435	4.66	...	5.11	0.8 ± 0.5	0.5 ± 0.2	...	...	1.52	1 N h	
444 2PBC J0855.6+7812	NGC 2655	LIN	133.882	78.204	3.80	1.20	7.23	1.3 ± 0.8	0.5 ± 0.1	0.0047	41.80	1.54	1 Y h a f	
445 2PBC J0855.7+6423	MCG+11-11-032	G	133.930	64.395	3.77	3.30	7.31	1.3 ± 0.8	0.42 ± 0.09	...	...	1.41	3 N h a	
446 2PBC J0855.8-2855	2MASX J08551746-2854218	G	133.941	-28.925	4.36	6.32	5.72	0.8 ± 0.5	0.4 ± 0.1	...	...	1.56	3 N h a	
447 2PBC J0855.9+0049	2MASX J08555426+0051110	Sy1	133.968	0.832	3.91	1.34	6.86	0.8 ± 0.5	0.3 ± 0.1	0.0523	43.74	1.19	3 Y h b	
	2MASX J08554766+0047390	Sy1	...	...	...	2.56	...	...	...	0.0417	43.54	...	...
448 2PBC J0859.5+4456	...	...	134.888	44.948	4.53	...	5.36	0.7 ± 0.4	0.3 ± 0.1	...	...	1.49	2 N h	
449 2PBC J0900.4-3335	...	...	135.109	-33.590	5.03	...	4.95	0.7 ± 0.4	0.2 ± 0.1	...	...	2.10	3 N h	
450 2PBC J0902.1-4033	Vela X-1	HXB	135.528	-40.553	0.60	0.08	2342.09	356.5 ± 0.3	0.1446 ± 0.0002	...	...	98.55	2 Y l a I b	
451 2PBC J0902.2+6004	Mrk 18	Sy2	135.562	60.115	3.35	3.00	8.99	1.2 ± 0.8	0.6 ± 0.1	0.0109	42.49	1.70	1 Y h a	
452 2PBC J0902.6-6815	NGC 2788A	AGN	135.633	-68.229	2.96	0.55	11.22	1.7 ± 1.0	0.49 ± 0.08	0.0137	42.85	1.57	3 Y h a I	
453 2PBC J0902.6-4813	IGR J09026-4812	gam	135.683	-48.211	2.24	0.70	18.80	2.9 ± 1.4	0.46 ± 0.05	0.0390	44.00	1.74	3 Y l a I	
454 2PBC J0902.9-7414	...	...	135.727	-74.246	4.51	...	5.41	1.0 ± 0.7	0.7 ± 0.2	...	...	1.47	1 N h	
455 2PBC J0904.5+5535	2MASX J09043699+5536025	Sy1	136.156	55.584	3.50	0.99	8.33	1.0 ± 0.6	0.36 ± 0.09	0.0371	43.51	1.55	3 Y h a	
456 2PBC J0908.8-0940	4U 0900-09	CIG	137.216	-9.681	2.58	2.69	14.43	1.4 ± 0.7	< 0.06	0.0535	44.00	1.70	2 Y h a	
457 2PBC J0909.2+0350	1RXS J090915.6+035453	QSO	137.329	3.900	3.59	1.03	7.95	1.4 ± 0.9	0.5 ± 0.1	3.2000	47.89	1.49	1 Y h a f	
458 2PBC J0911.4+4528	2MASX J09112999+4528060	Sy2	137.880	45.480	3.08	0.81	10.42	1.7 ± 0.9	0.36 ± 0.06	0.0268	43.43	1.54	3 Y h a	
459 2PBC J0916.2-6218	SWIFT J0917.2-6221	Sy1	139.042	-62.318	2.46	0.40	15.73	2.4 ± 0.5	0.31 ± 0.04	0.0571	44.27	1.68	3 Y h a I b	
460 2PBC J0917.2-6454	2MASX J09172716-6456271	G	139.308	-64.916	4.47	2.06	5.48	0.9 ± 0.5	0.28 ± 0.10	...	...	1.63	3 N h a b	
461 2PBC J0918.4+1619	Mrk 704	Sy1	139.618	16.305	2.40	0.53	16.52	2.9 ± 0.5	0.36 ± 0.04	0.0292	43.75	1.64	3 Y h a b	
462 2PBC J0918.8-4414	...	...	139.716	-44.236	4.90	...	5.17	0.8 ± 0.6	0.4 ± 0.2	...	...	1.67	3 N l	
463 2PBC J0919.6-0738	6dFGS gJ091951.3-073542	Sy1	139.924	-7.634	5.00	3.31	5.01	0.8 ± 0.6	0.7 ± 0.3	0.1690	44.75	1.47	3 N h a b	
464 2PBC J0919.7+5523	RBS 0766	Sy1	139.938	55.401	4.08	2.83	6.39	1.0 ± 0.6	0.4 ± 0.1	0.1226	44.57	1.41	3 Y h a b	
465 2PBC J0919.9+3712	IC 2461	G	140.000	37.196	2.91	0.53	11.57	1.9 ± 1.1	0.40 ± 0.06	0.0075	42.38	1.50	1 Y h a	
466 2PBC J0920.4-5512	H 0918-549	LXB	140.113	-55.214	1.33	0.41	57.59	8.7 ± 0.3	0.32 ± 0.01	...	...	3.00	3 Y l a I b	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R_{30-150}/R_{14-150})	Redshift	log L_{14-150} ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
467	2PBC J0920.8-0803	MCG -01-24-012	140.206	-8.058	2.08	0.80	21.71	4.5 ± 0.4	0.40 ± 0.03	0.0198	43.60	1.68	3 Y h a I	
468	2PBC J0921.2-0821	2MASX J09211095-0818184	140.300	-8.360	4.99	3.30	5.03	1.3 ± 0.7	0.37 ± 0.09	0.0648	44.12	1.76	1 N h b	
469	2PBC J0922.1-6317	V* V395 Car	140.549	-63.295	4.97	2.62	5.06	0.3 ± 0.1	< 0.2	...	...	1.79	2 N h a b	
470	2PBC J0923.7-2134	PKS 0921-213	140.944	-21.580	3.94	2.07	6.78	1.2 ± 0.7	0.4 ± 0.1	0.0530	43.88	1.53	1 N h a b	
471	2PBC J0923.7+2255	RBS 0770	140.956	22.937	2.24	2.26	18.74	3.5 ± 1.3	0.47 ± 0.04	0.0326	43.92	1.38	1 Y h a b	
472	2PBC J0924.0-3141	1RXS J092418.0-314212	141.003	-31.693	2.89	1.47	11.67	1.7 ± 1.0	0.30 ± 0.06	...	...	1.73	1 Y h a	
473	2PBC J0925.2+5216	Mrk 110	141.306	52.277	1.74	0.58	31.35	5.0 ± 0.3	0.39 ± 0.02	0.0353	44.16	1.51	3 Y h a I b	
474	2PBC J0925.6+6931	IGR J09253+6929	141.420	69.529	4.95	3.23	5.10	0.7 ± 0.4	0.3 ± 0.1	0.0390	43.37	1.33	3 N h b I	
475	2PBC J0926.1+1245	Mrk 705	141.527	12.743	3.17	0.94	9.90	1.8 ± 1.0	0.40 ± 0.07	0.0280	43.50	1.12	1 Y h a b	
476	2PBC J0927.1+2301	NGC 2885	141.852	23.038	3.67	1.74	7.67	1.5 ± 1.0	0.5 ± 0.1	0.0250	43.31	1.34	1 Y h a b	
477	2PBC J0927.8-6945	PBCX J092752.4-694439	141.964	-69.756	3.81	1.33	7.17	0.8 ± 0.5	0.12 ± 0.09	...	...	1.54	2 N h a	
478	2PBC J0928.5+4959	...	142.130	49.995	4.96	...	5.08	0.5 ± 0.3	0.3 ± 0.2	...	...	1.52	1 N h	
479	2PBC J0929.6+6231	...	142.423	62.527	4.78	...	4.91	0.6 ± 0.4	0.4 ± 0.2	...	...	1.70	3 N h	
480	2PBC J0930.6+4954	RBS 0782	142.609	49.855	4.23	1.95	6.02	0.4 ± 0.2	0.2 ± 0.1	0.1880	44.71	1.52	2 Y h a b	
481	2PBC J0931.3-5104	...	142.828	-51.075	4.59	...	5.24	0.8 ± 0.5	0.4 ± 0.1	...	...	1.28	3 N I	
482	2PBC J0933.9+3145	...	143.477	31.757	4.99	...	5.03	0.7 ± 0.5	0.5 ± 0.2	...	...	1.37	1 N h	
483	2PBC J0934.7-2155	ESO 565-19	143.682	-21.923	3.25	0.33	9.48	2.2 ± 1.4	0.56 ± 0.08	0.0157	43.09	1.52	1 Y h a	
484	2PBC J0935.4+2616	2MASX J09352707+2617093	143.856	26.277	4.57	0.66	5.29	0.7 ± 0.4	0.4 ± 0.1	0.1100	44.36	1.42	1 N h b b	
485	2PBC J0936.0-6551	...	144.009	-65.853	4.26	...	5.95	1.0 ± 0.6	0.5 ± 0.1	...	...	1.36	3 N h	
486	2PBC J0941.2-4525	...	145.305	-45.418	4.91	...	5.16	0.5 ± 0.3	0.3 ± 0.2	...	...	1.50	2 N h	
487	2PBC J0942.1+2342	1RXS J094204.0+234106	145.541	23.705	4.08	1.81	6.41	1.1 ± 0.7	0.5 ± 0.1	0.0213	43.06	1.28	3 N h b b	
488	2PBC J0945.7-1419	NGC 2992	146.418	-14.355	2.53	1.77	14.86	2.6 ± 1.5	0.45 ± 0.06	0.0077	42.52	1.68	1 Y h a I b	
489	2PBC J0946.9+6315	2MASS J09471552+6317165	146.738	63.257	4.99	2.78	5.02	0.4 ± 0.3	0.3 ± 0.2	0.4875	45.71	1.46	2 N h a f	
490	2PBC J0947.6-3056	MCG-05-23-016	146.919	-30.931	1.07	1.07	104.44	17.2 ± 0.3	0.347 ± 0.007	0.0082	43.41	1.86	3 Y h a I b	
491	2PBC J0947.6+0725	3C 227	146.924	7.426	3.04	0.85	10.69	1.7 ± 0.8	0.37 ± 0.07	0.0865	44.51	1.39	1 Y h a	
492	2PBC J0948.9+0021	RX J0948.8+0022	147.229	0.351	4.91	1.51	5.17	1.2 ± 0.8	0.6 ± 0.2	0.5839	46.02	1.45	1 N h a f F	
493	2PBC J0949.2+4036	4C 40.24	147.290	40.605	3.87	4.36	6.99	0.7 ± 0.4	0.4 ± 0.1	1.2520	46.97	1.67	1 Y h a f	
494	2PBC J0950.0+7315	4C 73.08	147.508	73.253	3.78	1.38	7.27	1.2 ± 0.7	0.37 ± 0.09	0.0586	43.98	1.27	1 N h a	
495	2PBC J0952.1-0648	NGC 3035	148.005	-6.818	3.02	1.79	10.76	1.7 ± 1.0	0.55 ± 0.10	0.0145	42.90	1.42	3 Y h a b	
496	2PBC J0952.1-6234	IGR J09523-6231	148.042	-62.582	4.26	4.01	5.95	1.1 ± 0.6	0.34 ± 0.10	0.2520	45.32	1.31	2 N h a I	
497	2PBC J0954.8+3724	IC 2515	148.673	37.420	4.00	0.79	6.60	1.2 ± 0.8	0.5 ± 0.1	0.0193	42.99	1.30	3 Y h a	
498	2PBC J0955.1+6904	M81	148.887	69.066	3.32	0.04	9.12	1.0 ± 0.6	0.4 ± 0.1	0.0001	38.63	1.47	1 Y h a b	
499	2PBC J0955.7+6941	M 82	148.944	69.695	4.20	0.98	6.10	0.5 ± 0.3	< 0.1	0.0007	39.86	1.37	2 N h a b F	
500	2PBC J0957.6-4208	1RXS J095750.4-420801	149.408	-42.145	3.94	2.40	6.79	0.8 ± 0.5	0.21 ± 0.10	...	...	1.51	2 N h b b	
501	2PBC J0959.4-2249	NGC 3081	149.865	-22.822	1.71	0.52	32.67	7.3 ± 0.5	0.48 ± 0.02	0.0079	43.00	1.79	3 Y h a I f	
502	2PBC J0959.6+1301	NGC 3080	149.902	13.028	4.76	4.81	4.93	0.7 ± 0.5	0.5 ± 0.2	0.0354	43.33	1.56	3 N h a b	
503	2PBC J0959.6-3113	2MASX J09594263-3112581	149.908	-31.226	3.22	1.16	9.64	2.0 ± 1.1	0.40 ± 0.07	0.0370	43.80	1.68	3 Y h a b	
504	2PBC J1001.8+2847	3C 234.0	150.458	28.789	4.51	0.18	5.41	0.6 ± 0.3	0.3 ± 0.2	0.1849	44.76	1.39	2 N h a	
505	2PBC J1002.0+5539	4C 55.19	150.469	55.673	2.29	0.85	18.07	2.5 ± 0.6	0.43 ± 0.04	0.0037	41.89	1.65	1 Y h a f	
506	2PBC J1002.3+0304	...	150.576	3.077	4.70	...	5.05	0.7 ± 0.4	0.2 ± 0.1	...	...	1.54	2 N h	
507	2PBC J1005.9-2303	ESO 499-41	151.492	-23.050	3.71	0.62	7.50	1.2 ± 0.8	0.5 ± 0.1	0.0127	42.64	1.68	3 N h a b	
508	2PBC J1009.7-4248	SWIFT J1009.3-4250	152.459	-42.814	2.45	0.34	15.84	3.2 ± 0.8	0.46 ± 0.04	0.0330	43.90	1.65	1 Y h a I	
509	2PBC J1009.7-5816	GRO J1008-57	152.466	-58.268	1.29	1.64	62.63	8.2 ± 0.3	0.22 ± 0.01	...	...	20.23	3 Y l a I	
510	2PBC J1010.9-5748	IGR J10109-5746	152.748	-57.813	2.25	0.70	18.59	2.3 ± 0.4	0.18 ± 0.03	...	...	1.99	2 Y l a I f	
511	2PBC J1013.4-3559	ESO 374- G 044	153.356	-35.970	3.57	1.35	8.03	1.4 ± 0.8	0.40 ± 0.09	0.0283	43.40	1.40	1 Y h a	
512	2PBC J1017.2-0404	2dFGRS TGN156Z174	154.301	-4.076	4.95	1.21	5.09	1.1 ± 0.7	0.5 ± 0.1	0.0408	43.60	1.25	1 N h a f	
513	2PBC J1020.5-0235	...	155.126	-2.589	4.34	...	5.76	1.1 ± 0.7	0.4 ± 0.1	...	...	1.16	1 N I	
514	2PBC J1021.8-0326	RBS 857	155.407	-3.472	2.94	1.28	11.33	1.8 ± 1.0	0.39 ± 0.07	0.0409	43.83	1.01	3 Y h a b	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b		Hardness ratio (R_{30-150}/R_{14-150})	Redshift	$\log L_{14-150}^c$ (erg s ⁻¹)	Var Flag 1 ^d				Flag 2 ^e	
								(erg cm ⁻² s ⁻¹)				A	B	C	D	I	R	F
515 2PBC J1022.0+5123	RX J1022.2+5124 2	BLA	155.504	51.385	4.61	2.01	5.21	0.3 ± 0.2	< 0.2	0.1417	44.28	1.34	2	N	h	a	b
516 2PBC J1023.5+1951	NGC 3227	Sy1	155.875	19.862	1.30	0.21	61.42	10.3 ± 0.3	0.40 ± 0.01	0.0036	42.48	1.61	3	Y	h	a	I b
517 2PBC J1024.6-2332	ESO 500-34	Sy2	156.135	-23.525	3.70	1.76	7.55	1.2 ± 0.7	0.4 ± 0.1	0.0123	42.61	1.63	1	N	h	b	
518 2PBC J1029.7-3822	...	...	157.432	-38.370	4.51	...	5.41	0.7 ± 0.4	0.3 ± 0.2	...	...	1.44	1	N	h		
519 2PBC J1031.4-4200	...	...	157.871	-42.016	3.92	...	6.85	1.1 ± 0.7	0.4 ± 0.1	...	...	1.61	3	N	h		
520 2PBC J1031.8-3451	NGC 3281	Sy2	157.957	-34.854	1.59	0.47	38.07	7.7 ± 0.4	0.42 ± 0.02	0.0114	43.35	1.88	3	Y	h	a	I
521 2PBC J1031.8-1417	RBS 0880	QSO	157.965	-14.295	2.35	1.03	17.16	3.0 ± 0.6	0.38 ± 0.04	0.0860	44.75	1.48	3	Y	h	a	
522 2PBC J1032.6-2837	ESO 436-34	EmG	158.155	-28.627	4.32	1.87	5.81	1.1 ± 0.7	0.5 ± 0.1	0.0120	42.56	1.61	1	N	h	a	
523 2PBC J1033.6+5253	2MASX J10331570+5252182	G	158.408	52.886	4.22	3.36	6.04	0.5 ± 0.3	< 0.1	0.0653	43.76	1.23	3	N	h	a	
524 2PBC J1034.2+7301	...	...	158.565	73.028	4.80	...	4.87	0.7 ± 0.5	0.5 ± 0.2	...	...	1.18	1	N	h		
525 2PBC J1037.7-5649	TYC 8609-1385-1	HXB	159.405	-56.822	2.76	1.42	12.73	1.5 ± 0.9	0.19 ± 0.06	...	...	2.27	3	N	l	b	I b
526 2PBC J1037.9-5316	...	...	159.485	-53.283	5.04	...	4.94	0.5 ± 0.4	0.3 ± 0.1	...	...	1.77	2	N	l		
527 2PBC J1038.8-4947	SWIFT J1038.8-4942	Sy1	159.698	-49.777	2.93	0.51	11.37	2.3 ± 1.3	0.45 ± 0.06	0.0600	44.29	1.44	1	Y	h	a	I b
528 2PBC J1040.4-4624	IGR J10404-4625	Sy2	160.135	-46.414	2.92	1.82	11.47	2.3 ± 1.3	0.40 ± 0.06	0.0240	43.48	1.41	3	Y	h	a	I
529 2PBC J1042.2+0043	...	...	160.565	0.723	4.74	...	4.96	1.0 ± 0.6	0.4 ± 0.1	...	...	1.49	1	N	h		
530 2PBC J1043.4+1105	SDSS J104326.47+110524.2	QSO	160.849	11.072	4.12	1.23	6.30	1.1 ± 0.7	0.41 ± 0.10	0.0475	43.78	1.51	1	N	h	b	
531 2PBC J1043.8+7025	MCG+12-10-067	Sy2	160.908	70.425	3.46	2.83	8.50	0.9 ± 0.6	0.4 ± 0.1	0.0332	43.38	1.39	1	Y	h	a	
532 2PBC J1044.1+8054	S5 1039+81	BZQ	161.060	80.927	3.86	1.00	7.03	0.8 ± 0.4	0.3 ± 0.1	1.2540	46.90	1.35	1	Y	h	a	b F
533 2PBC J1044.8+3813	...	...	161.201	38.148	4.49	...	5.44	1.0 ± 0.7	0.5 ± 0.1	...	...	1.50	1	N	h		
534 2PBC J1044.8-5942	V* eta Car	V*	161.203	-59.702	4.48	2.14	5.47	0.6 ± 0.5	0.2 ± 0.1	...	...	1.55	2	N	l	a	I
535 2PBC J1045.7-6027	...	...	161.431	-60.465	4.41	...	5.60	0.9 ± 0.5	0.4 ± 0.1	...	...	1.54	3	N	l		
536 2PBC J1046.6+2557	UGC 05881	GiG	161.677	25.955	2.89	1.45	11.70	1.9 ± 0.7	0.37 ± 0.05	0.0204	43.25	1.67	1	Y	h	a	I
537 2PBC J1048.6-2508	NGC 3393	Sy2	162.113	-25.135	3.06	1.82	10.56	2.2 ± 1.4	0.54 ± 0.09	0.0125	42.88	1.37	1	Y	h	a	
538 2PBC J1048.9-3901	1RXS J104833.9-390238	X	162.235	-39.019	4.87	4.61	5.22	0.6 ± 0.4	0.4 ± 0.2	...	...	1.60	1	N	l	b	b
539 2PBC J1049.4+2258	Mrk 417	Sy2	162.362	22.974	2.39	1.09	16.58	2.9 ± 1.1	0.44 ± 0.04	0.0328	43.85	1.74	1	Y	h	a	
	PBCX J104912.3+225615	X				1.09				...	...				
540 2PBC J1051.3-1703	NGC 3431	G	162.848	-17.060	4.10	3.71	6.34	1.3 ± 0.9	0.5 ± 0.1	0.0175	42.95	1.55	1	N	h	a	
541 2PBC J1052.6+1037	2MASX J10523297+1036205	Sy1	163.149	10.618	4.17	0.99	6.16	1.2 ± 0.7	0.38 ± 0.09	0.0880	44.38	1.60	3	Y	h	a	
542 2PBC J1053.4-3037	...	...	163.362	-30.631	5.04	...	4.94	0.7 ± 0.4	0.2 ± 0.2	...	...	1.41	2	N	h		
543 2PBC J1059.9+6505	2MASX J10594361+6504063	Sy2	164.952	65.077	3.35	0.74	9.00	0.8 ± 0.5	0.4 ± 0.1	0.0840	44.16	1.66	1	N	h	b	
544 2PBC J1101.0+1102	Mrk 728	Sy1	165.213	11.060	4.57	2.74	5.28	1.1 ± 0.8	0.6 ± 0.2	0.0360	43.48	1.25	1	Y	h	a	b
545 2PBC J1101.2+7229	4C 72.16	BZQ	165.302	72.498	4.26	5.04	5.94	1.1 ± 0.7	0.5 ± 0.1	1.4600	46.96	1.39	3	N	h	a	b
546 2PBC J1103.4+3726	2MASX J11034025+3729249	Sy1	165.866	37.447	4.46	3.58	5.49	0.7 ± 1.3	0.4 ± 0.2	0.0740	43.98	1.05	3	N	h	a	
547 2PBC J1103.6-2329	1H 1100-230	BZB	165.900	-23.478	3.21	0.90	9.67	1.3 ± 0.8	0.33 ± 0.09	0.1860	45.14	1.46	2	Y	h	a	b F
548 2PBC J1104.4+3813	Mrk 421	BZB	166.116	38.209	1.04	0.10	114.77	12.1 ± 0.2	0.238 ± 0.006	0.0300	44.40	20.06	2	Y	h	a	I b F
549 2PBC J1105.8+5854	1RXS J110537.4+585128	X	166.467	58.912	4.93	3.74	5.13	0.6 ± 0.4	0.4 ± 0.2	0.1915	44.81	1.38	3	N	h	b	b
550 2PBC J1106.4+7234	NGC 3516	Sy1	166.648	72.566	1.26	0.91	66.65	10.4 ± 0.3	0.42 ± 0.01	0.0088	43.25	1.84	3	Y	h	a	b
551 2PBC J1107.2-4827	...	...	166.803	-48.453	4.64	...	5.15	0.8 ± 0.6	0.4 ± 0.2	...	...	1.22	1	N	h		
552 2PBC J1113.7+0930	Mrk 732	Sy1	168.395	9.544	3.43	4.47	8.62	1.5 ± 0.9	0.43 ± 0.09	0.0293	43.46	1.58	3	Y	h	a	b
553 2PBC J1113.6+7942	MCG +13-08-056	G	168.420	79.716	4.34	2.87	5.75	1.0 ± 0.6	0.5 ± 0.1	...	...	1.30	1	N	h	a	
554 2PBC J1114.0+2024	...	...	168.505	20.408	4.99	...	5.02	0.9 ± 0.6	0.5 ± 0.1	...	...	1.93	3	N	h		
555 2PBC J1115.3+5425	MCG+09-19-015	GiC	168.832	54.433	4.68	2.75	5.08	0.7 ± 0.5	0.4 ± 0.1	...	...	1.42	1	N	h	a	
556 2PBC J1117.2-2903	QSO B1114-2846	Sy1	169.297	-29.089	4.07	3.27	6.43	0.6 ± 0.3	< 0.2	0.0704	43.87	1.24	2	N	h	b	b
557 2PBC J1117.9+4803	XTE J1118+480	LXB	169.547	48.043	3.98	0.37	6.68	0.6 ± 0.4	0.3 ± 0.1	...	...	3.31	1	Y	h	a	
558 2PBC J1118.4-5438	2MASS J11182121-5437286	IR	169.618	-54.636	3.56	1.23	8.07	1.5 ± 0.9	0.38 ± 0.08	...	...	1.48	1	Y	h	a	I
559 2PBC J1120.9-4316	H 1118-429	Sy1	170.213	-43.264	3.82	0.57	7.17	1.6 ± 0.9	0.40 ± 0.09	0.0567	44.09	1.43	3	Y	h	a	b
560 2PBC J1120.9-6154	2E 2448	HXB	170.242	-61.912	1.36	0.32	54.61	8.8 ± 0.3	0.178 ± 0.010	...	...	17.12	2	N	l	a	I
561 2PBC J1121.2-6037	Cen X-3	HXB	170.315	-60.621	0.69	0.12	696.75	70.8 ± 0.2	0.0483 ± 0.0009	...	...	86.24	2	Y	l	a	I b

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
562	2PBC J1124.9-5919	<i>SNR</i>	171.244	-59.319	4.26	5.26	5.95 0.6 ± 0.4	0.3 ± 0.2	...	...	1.43	3 N 1 a	b F
563	2PBC J1125.4+5424	Mrk 0040	171.365	54.382	2.76	1.25	12.69 1.2 ± 0.6	0.32 ± 0.07	0.0206	43.06	1.48	3 Y h a	b
564	2PBC J1126.8+3512	Mrk 423	171.717	35.216	4.39	2.21	5.65 0.9 ± 0.6	0.4 ± 0.1	0.0319	43.31	1.56	3 N h b	
565	2PBC J1126.9+1851	...	171.725	18.861	4.28	...	5.89 0.8 ± 0.5	0.3 ± 0.1	...	...	1.55	2 N h	
566	2PBC J1127.4+1908	RX J1127.2+1909	171.833	19.121	3.03	2.09	10.70 1.6 ± 0.5	0.31 ± 0.06	0.1000	44.60	1.49	3 Y h a	b
567	2PBC J1127.5-2913	ESO 439-9	171.889	-29.243	3.96	2.31	6.71 1.4 ± 0.9	0.7 ± 0.2	0.0251	43.29	1.87	1 Y h a	
	1RXS J112744.2-291046	X				4.46			...	...	
568	2PBC J1127.7-5320	...	171.945	-53.344	4.76	...	4.95 0.7 ± 0.4	0.3 ± 0.2	...	...	1.29	1 N h	
569	2PBC J1130.1-1449	OM -146	172.529	-14.814	2.56	0.62	14.62 3.2 ± 1.9	0.52 ± 0.05	1.1870	47.24	1.50	3 Y h a	b F
570	2PBC J1130.4+6848	2EUVE J1131+68.8	172.624	68.803	4.77	5.02	4.93 0.4 ± 0.3	0.2 ± 0.2	0.0430	43.27	1.33	2 N h a	b
571	2PBC J1131.0-6256	IGR J11305-6256	172.790	-62.938	2.27	0.40	18.31 2.9 ± 0.4	0.24 ± 0.03	...	...	2.22	2 Y 1 a I	
572	2PBC J1132.6+5259	NGC 3718	173.168	52.994	4.17	4.51	6.15 0.8 ± 0.5	0.4 ± 0.1	0.0033	41.29	1.56	3 N h a	
573	2PBC J1132.9+1017	BZQ J1132+1023	173.202	10.274	3.00	1.30	10.91 1.7 ± 0.9	0.41 ± 0.07	0.5397	46.28	1.52	1 N h b	b
	2MASX J11324928+1017473	Sy1				1.35			0.0436	43.87			
	1RXS J113244.0+102041	Sy1				4.28			0.1450	44.97			
574	2PBC J1137.2+6735	RBS 1004	174.020	67.657	4.36	3.36	5.71 0.6 ± 0.3	0.2 ± 0.1	0.1350	44.48	1.59	3 Y h a	b F
575	2PBC J1136.4+2134	Mrk 739	174.127	21.554	2.75	2.53	12.81 1.4 ± 0.6	0.32 ± 0.07	0.0298	43.44	1.74	3 Y h a	b
576	2PBC J1136.8-6005	IGR J11366-6002	174.202	-60.090	3.98	2.40	6.67 1.5 ± 0.9	0.46 ± 0.09	0.0140	42.81	1.63	3 N 1 a I f	
577	2PBC J1136.9+6120	4C 61.23	174.240	61.335	4.91	2.84	5.16 0.7 ± 0.5	0.4 ± 0.2	0.1110	44.32	1.36	1 N h b	
578	2PBC J1138.7+2528	...	174.699	25.481	4.40	...	5.64 0.8 ± 0.5	0.4 ± 0.1	...	...	1.48	2 N h	
579	2PBC J1139.0-3744	NGC 3783	174.752	-37.733	1.19	0.43	76.81 15.4 ± 0.4	0.402 ± 0.009	0.0096	43.50	1.71	1 Y h a I b	
580	2PBC J1139.0+5911	RBS 1011	174.779	59.192	2.59	0.48	14.27 2.1 ± 0.5	0.35 ± 0.04	0.0600	44.25	1.41	1 Y h a	b
581	2PBC J1139.5-6523	V* GT Mus	174.892	-65.393	4.01	0.54	6.58 0.8 ± 0.4	0.14 ± 0.08	...	...	2.03	2 N 1 a I b	
582	2PBC J1139.6+3157	NGC 3786	174.900	31.943	3.15	2.43	9.99 1.6 ± 1.0	0.49 ± 0.08	0.0100	42.56	1.31	1 Y h a	f
583	2PBC J1140.8+3611	...	175.219	36.190	4.37	...	5.70 0.9 ± 0.6	0.5 ± 0.1	...	...	1.27	1 N h	
584	2PBC J1141.2+2156	RBS 1019	175.300	21.914	3.34	1.76	9.02 1.4 ± 0.8	0.43 ± 0.08	0.0630	44.12	1.73	3 Y h a	b
585	2PBC J1141.2-6409	V* V1033 Cen	175.319	-64.159	4.90	0.99	5.18 0.6 ± 0.3	< 0.1	...	...	1.59	2 N 1 b	b
586	2PBC J1143.6+7141	DO Dra	175.886	71.709	2.18	1.30	19.84 1.6 ± 0.6	0.15 ± 0.04	...	...	1.89	2 Y h a	b
587	2PBC J1144.1-6106	UCAC2 4813819	176.049	-61.118	1.94	1.48	25.12 4.1 ± 0.4	0.33 ± 0.03	...	...	4.32	3 Y 1 a I f	
588	2PBC J1144.4+3652	RBS 1024	176.112	36.864	4.44	1.43	5.54 1.2 ± 0.8	0.7 ± 0.1	0.0400	43.63	1.66	1 Y h a	b
589	2PBC J1144.9+7940	MCG+13-09-002	176.187	79.678	2.25	1.42	18.65 2.5 ± 0.4	0.32 ± 0.04	0.0153	43.11	1.15	1 Y h a	b
590	2PBC J1145.4+5858	MCG+10-17-061	176.372	58.983	3.53	0.57	8.20 1.1 ± 0.6	0.34 ± 0.09	0.0103	42.40	1.56	3 N h a	
591	2PBC J1145.6-6955	2MASS J11455362-6954017	176.402	-69.922	4.31	1.95	5.82 1.3 ± 0.8	0.42 ± 0.09	...	...	1.30	1 N h a I b	
592	2PBC J1145.7-1826	RBS 1030	176.430	-18.438	1.99	1.18	23.66 4.6 ± 0.5	0.41 ± 0.03	0.0329	44.06	1.22	1 Y h a I b	
593	2PBC J1145.9+7422	2MASX J11462959+7421289	176.772	74.344	4.95	2.64	5.09 0.9 ± 0.5	0.5 ± 0.1	0.0560	43.80	1.36	3 N h b	
594	2PBC J1147.5-6157	1E 1145.1-6141	176.866	-61.961	0.89	0.44	193.12 28.8 ± 0.3	0.239 ± 0.003	...	...	13.73	3 Y 1 a I b	
595	2PBC J1148.8+2938	MCG+05-28-032	177.202	29.643	3.13	0.57	10.11 1.7 ± 1.0	0.50 ± 0.07	0.0230	43.29	1.62	1 N h a	
596	2PBC J1149.2-0413	RBS 1037	177.305	-4.277	3.95	1.36	6.77 1.0 ± 0.6	0.3 ± 0.1	0.0850	44.27	1.48	1 N h b	b
597	2PBC J1149.3+5318	2MASS J11492152+5320132	177.341	53.311	4.77	1.58	4.91 0.5 ± 0.3	0.2 ± 0.2	0.0950	44.06	1.31	3 N h b	
	2MASS J11493687+5315169	QSO				4.03			0.1902	44.74			
598	2PBC J1152.2-1122	RBS 1044	178.032	-11.360	3.13	1.31	10.12 1.6 ± 0.9	0.37 ± 0.08	0.0490	43.96	1.32	1 Y h a	b
599	2PBC J1152.8-0511	MCG-01-30-041	178.202	-5.194	4.89	2.67	5.20 0.7 ± 0.4	0.4 ± 0.2	0.0187	42.72	1.54	3 N h a	b
600	2PBC J1153.4+4930	RBS 1046	178.380	49.528	3.73	1.21	7.47 0.8 ± 0.5	0.4 ± 0.1	0.3340	45.48	1.35	3 Y h a	b
601	2PBC J1156.2+0140	...	179.067	1.677	4.92	...	5.14 0.3 ± 0.5	< 0.3	...	...	1.66	2 N h	
602	2PBC J1158.1+5527	NGC 3998	179.496	55.451	2.86	0.40	11.93 1.4 ± 0.8	0.36 ± 0.07	0.0036	41.61	1.25	3 Y h a	b
603	2PBC J1158.4+4232	IC 751	179.621	42.545	4.49	4.59	5.44 0.8 ± 0.6	0.6 ± 0.2	0.0318	43.28	1.77	1 N 1 b	
604	2PBC J1159.8-2004	2MASS J11594101-1959247	179.960	-20.072	4.65	5.36	5.14 0.9 ± 0.6	0.4 ± 0.2	0.4500	45.80	1.27	3 N 1 a	b
605	2PBC J1201.0+0647	CGCG 041-020	180.247	6.831	2.82	1.53	12.23 1.8 ± 1.0	0.40 ± 0.07	0.0359	43.73	1.79	1 Y h a I	

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Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
606	2PBC J1201.3-0340	Mrk 1310	180.314	-3.665	3.73	0.83	7.47	1.2 ± 0.7	0.4 ± 0.1	0.0196	43.00	1.26	3 Y h a b	
607	2PBC J1202.8-5349	2MASX J12024767-5350082	180.723	-53.839	2.01	0.89	23.39	4.4 ± 0.4	0.35 ± 0.03	0.0283	43.90	1.59	3 Y h a I	
608	2PBC J1203.1+4430	NGC 4051	180.800	44.511	1.84	1.30	27.79	3.3 ± 0.3	0.31 ± 0.02	0.0021	41.53	1.76	3 Y h a I b	
609	2PBC J1204.4+2018	NGC 4074	181.102	20.302	2.68	1.49	13.44	1.9 ± 1.1	0.44 ± 0.06	0.0225	43.32	1.61	1 Y h a I	
610	2PBC J1204.7-4344	1RXS J120452.8-434353	181.181	-43.745	4.86	1.86	5.25	0.7 ± 0.4	0.4 ± 0.2	0.0148	42.54	1.31	1 N h b b	
611	2PBC J1204.7+3108	UGC 07064	181.218	31.152	4.09	2.44	6.36	0.9 ± 0.6	0.4 ± 0.1	0.0250	43.12	1.29	3 Y h a f	
612	2PBC J1206.2+5244	NGC 4102	181.591	52.730	2.81	1.16	12.25	2.1 ± 1.2	0.49 ± 0.06	0.0028	41.58	1.40	3 Y h a	
613	2PBC J1207.6+3353	7C 1205+3409	181.904	33.881	4.06	0.87	6.46	1.2 ± 0.8	0.6 ± 0.1	0.0788	44.22	1.38	1 Y h a	
614	2PBC J1207.9+4306	NGC 4117	181.963	43.133	4.31	0.99	5.83	0.9 ± 0.6	0.5 ± 0.1	0.0029	41.24	1.43	1 Y h a	
615	2PBC J1209.1+4702	Mrk 0198	182.280	47.042	2.56	1.51	14.57	1.7 ± 0.9	0.36 ± 0.05	0.0245	43.37	1.61	3 Y h a	
616	2PBC J1209.5+4342	NGC 4138	182.367	43.710	2.23	1.52	18.96	2.8 ± 0.9	0.46 ± 0.04	0.0029	41.72	1.44	3 Y h a I	
617	2PBC J1210.0-4634	2MASX J12100404-4636274	182.502	-46.583	4.44	1.60	5.55	1.0 ± 0.6	0.4 ± 0.2	0.0315	43.34	1.46	1 N h a b	
618	2PBC J1210.5+3924	NGC 4151	182.630	39.404	0.79	0.28	309.75	45.6 ± 0.3	0.444 ± 0.002	0.0032	43.02	22.61	3 Y h a I	
619	2PBC J1210.7+3819	KUG 1208+386	182.680	38.317	2.71	1.14	13.11	1.6 ± 0.9	0.37 ± 0.06	0.0227	43.29	1.60	3 Y h a I	
620	2PBC J1211.3-3933	2MASX J12111425-3933268	182.843	-39.566	3.90	1.62	6.91	1.1 ± 0.7	0.4 ± 0.1	0.0610	43.99	1.39	1 N h b	
621	2PBC J1212.5-5802	PBCX J121226.1-580023	183.125	-58.037	4.58	1.93	5.27	0.9 ± 0.5	0.3 ± 0.1	...	...	1.53	1 N l a I	
622	2PBC J1212.8+0703	2MASS J12124981+0659451	183.205	7.034	4.00	2.29	6.60	1.4 ± 0.9	0.5 ± 0.1	0.2095	45.19	1.64	1 Y h a I	
		PBCX J121238.6+070129												
		X												
623	2PBC J1212.9-6453	EXMS B1210-645	183.255	-64.897	2.79	1.75	12.44	1.1 ± 0.6	< 0.05	...	...	1.26	2 Y l a I	
624	2PBC J1213.0+3239	...	183.267	32.651	4.70	...	5.04	0.9 ± 0.5	0.4 ± 0.1	...	...	1.37	1 N h	
625	2PBC J1213.7-6015	...	183.425	-60.261	4.32	...	5.79	0.8 ± 0.5	< 0.1	...	...	1.67	2 N l	
626	2PBC J1214.2+2932	Was 49	183.569	29.552	3.58	1.41	8.01	1.4 ± 0.8	0.40 ± 0.07	0.0640	44.13	1.77	1 Y h a I f	
627	2PBC J1215.3-3244	...	183.826	-32.734	4.90	...	5.18	0.8 ± 0.5	0.5 ± 0.2	...	...	1.45	3 N h	
628	2PBC J1215.8+5046	Mrk 1469	183.992	50.834	3.65	1.50	7.74	0.8 ± 0.5	0.6 ± 0.2	0.0312	43.23	1.53	1 Y h a b	
629	2PBC J1216.9-2615	ESO 505-31	184.282	-26.201	3.47	1.82	8.44	1.3 ± 0.8	0.4 ± 0.1	0.0403	43.69	1.38	3 N h b	
		ESO 505-30								0.0400	43.68			
630	2PBC J1217.2+6426	2MASS J12170480+6428228	184.301	64.436	4.70	2.33	5.05	0.3 ± 0.2	< 0.2	0.2777	45.03	1.31	2 N l b	
631	2PBC J1217.1+0712	NGC 4235	184.302	7.178	2.68	1.08	13.41	2.5 ± 1.4	0.43 ± 0.05	0.0077	42.51	1.69	3 Y h a I b	
632	2PBC J1218.4+2949	Mrk 766	184.614	29.813	2.47	0.15	15.62	1.9 ± 0.3	0.22 ± 0.04	0.0126	42.82	1.50	3 Y h a I b	
633	2PBC J1218.9+4718	NGC 4258	184.740	47.310	2.67	0.37	13.47	1.8 ± 1.0	0.43 ± 0.06	0.0015	40.98	1.61	1 Y h a I b	
634	2PBC J1220.1+0643	2MASS J12201843+0641196	185.041	6.723	4.49	2.94	5.45	0.9 ± 0.6	0.4 ± 0.1	0.2870	45.35	1.49	3 N h a b	
635	2PBC J1221.3+3008	1RXS J122121.7+301041	185.328	30.149	4.18	1.83	6.15	0.6 ± 0.3	0.3 ± 0.1	0.1836	44.80	1.60	2 N h a b F	
636	2PBC J1221.3-1110	2MASS J12212532-1111376	185.330	-11.175	4.70	1.87	5.04	0.7 ± 0.4	0.2 ± 0.1	0.2090	45.05	1.45	2 N h b	
637	2PBC J1221.8+7519	Mrk 205	185.449	75.303	2.89	0.50	11.66	1.1 ± 0.6	0.24 ± 0.07	0.0700	44.12	1.55	3 Y h a b	
638	2PBC J1222.3+0415	4C 04.42	185.589	4.236	3.30	0.93	9.21	2.5 ± 1.6	0.59 ± 0.07	0.9650	46.87	1.33	3 Y h a I b F	
639	2PBC J1223.4+0240	Mrk 50	185.860	2.681	2.75	0.57	12.77	2.0 ± 1.2	0.46 ± 0.07	0.0231	43.39	1.68	3 Y h a I b	
640	2PBC J1223.9+4042	SDSS J122358.97+404409.3	186.009	40.701	3.87	2.16	6.99	0.7 ± 0.4	0.2 ± 0.1	0.0964	44.24	1.24	1 Y h a f	
641	2PBC J1224.8+2122	4C +21.35	186.224	21.383	3.12	0.26	10.16	1.7 ± 1.0	0.41 ± 0.07	0.4350	46.04	1.56	3 Y h a b F	
642	2PBC J1225.7+1240	NGC 4388	186.447	12.662	1.00	0.06	128.26	23.1 ± 0.3	0.453 ± 0.006	0.0084	43.56	5.28	3 Y h a I	
643	2PBC J1225.7+3331	NGC 4395	186.448	33.516	2.60	1.86	14.16	2.1 ± 1.1	0.41 ± 0.05	0.0010	40.66	1.42	3 Y h a I	
644	2PBC J1226.6-6246	GX 301-2	186.665	-62.771	0.62	0.23	1843.25	236.1 ± 0.3	0.0678 ± 0.0003	...	...	95.32	2 Y l a I	
645	2PBC J1228.0-4854	XSS J12270-4859	187.004	-48.890	2.45	0.22	15.85	3.3 ± 1.0	0.44 ± 0.05	...	...	1.47	1 Y h a I ?	
646	2PBC J1228.0-0925	...	187.019	-9.426	4.84	...	5.28	1.0 ± 0.7	0.5 ± 0.2	...	...	1.29	1 N h	
647	2PBC J1229.1+0202	3C 273	187.276	2.043	0.92	0.55	168.31	35.6 ± 0.3	0.464 ± 0.004	0.1583	46.37	9.84	3 Y h a I b F	
648	2PBC J1231.3+7044	2MASS J12313656+7044144	187.845	70.747	4.83	1.29	4.82	0.6 ± 0.4	0.3 ± 0.1	0.2080	44.94	1.40	1 N h a b	
649	2PBC J1231.4+5759	...	187.858	57.993	4.49	...	5.44	0.8 ± 0.5	0.4 ± 0.1	...	...	1.93	2 N h	
650	2PBC J1231.9+2013	RBS 1125	187.998	20.188	4.31	2.04	5.83	0.9 ± 0.6	0.6 ± 0.2	0.0640	43.92	1.74	1 Y h a b	
651	2PBC J1232.2-4216	1RXS J123212.3-421745	188.032	-42.285	4.28	1.10	5.89	1.1 ± 0.7	0.4 ± 0.1	0.1000	44.43	1.41	1 Y h a b	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
652	2PBC J1234.7-6434	IGR J12349-6434	Sy*	188.712	-64.572	1.67	0.53	34.36 6.3 ± 0.4	0.29 ± 0.02	...	...	1.80	3 Y l a I
653	2PBC J1235.5-3954	NGC 4507	Sy2	188.901	-39.900	1.23	0.57	70.91 16.7 ± 0.4	0.413 ± 0.009	0.0117	43.71	2.46	1 Y h a I
654	2PBC J1237.7+1150	M 58	LIN	189.430	11.847	4.77	1.72	4.91 0.9 ± 0.6	0.5 ± 0.2	0.0050	41.70	1.83	1 N h a b
655	2PBC J1238.1-3843	V* V1025 Cen	DQ*	189.541	-38.718	4.67	1.34	5.10 0.7 ± 1.4	< 0.1	...	...	1.37	3 N h a b
656	2PBC J1238.8-2719	ESO 506- G 027	Sy2	189.726	-27.311	1.81	0.20	28.74 7.6 ± 0.6	0.47 ± 0.02	0.0252	44.04	1.83	3 Y h a I
657	2PBC J1239.1-1612	IGR J12391-1612	Sy2	189.779	-16.194	2.50	0.86	15.20 3.9 ± 1.5	0.47 ± 0.04	0.0367	44.08	1.32	3 Y h a I
658	2PBC J1239.6-0520	NGC 4593	Sy1	189.909	-5.338	1.63	0.49	36.36 7.6 ± 0.3	0.43 ± 0.02	0.0090	43.13	1.69	3 Y h a I b
659	2PBC J1240.3+3458	7C 1237+3519	QSO	190.082	34.977	4.33	4.37	5.79 0.8 ± 0.5	0.4 ± 0.2	1.1992	46.70	1.45	1 N h a f
660	2PBC J1240.6-3334	1ES 1238-332	Sy1	190.202	-33.559	3.14	0.70	10.06 1.9 ± 1.1	0.41 ± 0.08	0.0500	44.05	1.48	1 Y h a b
661	2PBC J1240.8+2736	2MASX J12410866+2734463 1RXS J124104.2+273535	Sy1 X	190.210	27.601	4.27 3.09	4.14	5.91 0.8 ± 0.5	0.4 ± 0.1	0.2050	45.01	1.43	3 N h b
662	2PBC J1240.9+6241	...	...	190.237	62.686	4.93	...	5.12 0.3 ± 0.6	< 0.2	...	...	1.40	2 N h
663	2PBC J1241.5-5749	IGR J12415-5750	Sy2	190.373	-57.823	2.45	0.82	15.90 3.6 ± 1.1	0.45 ± 0.04	0.0242	43.67	1.88	3 Y h a I b
664	2PBC J1243.1-6306	HIP 62027	HXB	190.781	-63.101	4.70	3.19	5.04 0.6 ± 0.4	< 0.1	...	...	1.51	3 N l a I b
665	2PBC J1246.5+5432	NGC 4686	LIN	191.650	54.523	2.70	0.86	13.20 2.1 ± 1.0	0.43 ± 0.05	0.0167	43.12	1.67	3 Y h a
666	2PBC J1248.0-5826	2MASX J12475784-5829599	IR	192.013	-58.447	4.22	3.23	6.03 0.9 ± 0.5	0.4 ± 0.1	...	...	1.15	3 N l a I
667	2PBC J1249.8-5906	3A 1246-588	LXB	192.427	-59.100	1.67	0.86	34.07 6.2 ± 0.3	0.32 ± 0.02	...	...	2.49	3 Y l a I b
668	2PBC J1251.8-5127	1RXS J125144.2-512809	X	192.963	-51.454	4.93	1.40	5.13 1.0 ± 0.6	0.4 ± 0.1	...	...	1.38	3 N h b b
669	2PBC J1252.1-1323	NGC 4748	Sy1	193.048	-13.398	4.56	1.04	5.30 0.8 ± 0.5	0.2 ± 0.1	0.0137	42.55	1.60	3 N h a I b
670	2PBC J1252.3-2914	EX Hya	DQ*	193.106	-29.252	2.26	0.32	18.43 2.5 ± 1.0	0.17 ± 0.04	...	...	2.19	3 Y h a b
671	2PBC J1253.3-4137	ESO 323-32	Sy2	193.356	-41.619	3.72	1.44	7.49 1.5 ± 0.8	0.37 ± 0.09	0.0159	42.92	1.61	3 Y h a I
672	2PBC J1254.8-2655	2MASX J12545637-2657021	AGN	193.714	-26.928	4.43	1.75	5.56 1.2 ± 0.7	0.4 ± 0.1	0.0591	44.00	1.33	3 N h a b
673	2PBC J1256.1-0547	3C 279	BZQ	194.041	-5.803	2.77	0.90	12.59 3.4 ± 2.0	0.49 ± 0.05	0.5362	46.50	1.57	1 Y h a I b F
674	2PBC J1256.4+2253	...	...	194.117	22.896	5.03	...	4.96 0.3 ± 0.2	< 0.2	...	...	1.81	2 N h
675	2PBC J1257.7-6917	1H 1254-690	LXB	194.426	-69.297	1.39	0.64	51.97 4.3 ± 0.4	0.04 ± 0.01	...	...	1.41	2 Y h a I b
676	2PBC J1259.5+2756	Coma Cluster	CIG	194.909	27.951	1.51	2.94	43.03 2.7 ± 0.4	0.03 ± 0.02	0.0231	43.53	2.20	2 Y h a I
677	2PBC J1300.1+1636	2MASS J13000535+1632148	Sy1	195.040	16.600	4.88	3.90	5.21 1.1 ± 0.7	0.6 ± 0.2	0.0800	44.20	1.80	1 N h a
678	2PBC J1301.2-6136	GX 304-1	HXB	195.311	-61.624	1.87	1.34	27.05 4.5 ± 0.4	0.21 ± 0.02	...	...	4.33	3 Y l a I
679	2PBC J1302.1-6356	IGR J13020-6359	HXB	195.529	-63.947	2.22	1.61	19.18 3.7 ± 0.4	0.31 ± 0.03	...	...	3.22	3 Y l a I
680	2PBC J1302.8+1622	Mrk 783	Sy1	195.721	16.375	3.43	2.36	8.64 1.5 ± 0.9	0.36 ± 0.07	0.0670	44.20	1.83	3 Y h a I b
681	2PBC J1303.2-1339	2MASX J13032223-1341332	Sy1	195.807	-13.663	4.15	2.74	6.22 1.3 ± 0.8	0.4 ± 0.1	0.0461	43.80	1.64	1 N h a b
682	2PBC J1304.0+5347	IGR J13038+5348	Sy1	196.007	53.795	2.21	0.39	19.37 2.6 ± 0.4	0.40 ± 0.04	0.0298	43.73	1.70	3 Y h a I b
683	2PBC J1304.0-1019	NGC 4939	Sy1	196.050	-10.327	3.63	0.92	7.79 1.8 ± 1.1	0.53 ± 0.10	0.0103	42.63	1.44	1 Y h a I
684	2PBC J1304.2-0533	NGC 4941	Sy2	196.062	-5.554	4.19	0.48	6.11 1.8 ± 1.1	0.48 ± 0.09	0.0037	41.73	1.47	3 Y h a I f
685	2PBC J1305.4-4928	NGC 4945	Sy2	196.353	-49.474	1.16	0.27	82.69 23.7 ± 0.3	0.529 ± 0.008	0.0019	42.27	4.70	3 Y h a I b F
686	2PBC J1306.5-4025	ESO 323-77	Sy2	196.643	-40.422	2.23	1.55	18.92 4.1 ± 0.4	0.41 ± 0.03	0.0149	43.31	1.40	3 Y h a I ?
687	2PBC J1309.0+1138	NGC 4992	Sy2	197.287	11.635	2.07	0.78	21.95 5.0 ± 0.8	0.50 ± 0.03	0.0252	43.85	1.86	3 Y h a I
688	2PBC J1310.1-1714	...	...	197.537	-17.243	4.91	...	5.15 1.1 ± 0.7	0.4 ± 0.1	...	...	1.29	3 N h
689	2PBC J1310.7-5551	IGR J13109-5552	Sy1	197.693	-55.854	2.91	0.62	11.55 3.0 ± 1.8	0.51 ± 0.06	0.1040	44.89	1.63	1 Y h a I
690	2PBC J1310.8-5625	2MASX J13103701-5626551	G	197.725	-56.418	4.85	2.96	5.26 1.2 ± 0.7	0.5 ± 0.1	...	...	1.72	3 N h a I
691	2PBC J1313.0-1108	RBS 1233	Sy1	198.267	-11.135	3.63	0.57	7.81 1.6 ± 0.9	0.34 ± 0.08	0.0343	43.65	1.59	3 Y h a I b
692	2PBC J1315.2+4423	Mrk 248	Sy2	198.836	44.415	2.56	0.98	14.62 1.5 ± 0.5	0.30 ± 0.06	0.0353	43.64	1.42	3 Y h a I
693	2PBC J1317.0-7155	2MASX J13165424-7155270	G	199.254	-71.924	4.23	0.52	6.01 1.1 ± 0.6	0.3 ± 0.1	...	...	1.86	3 N h a b
694	2PBC J1318.2-6259	IGR J13186-6257	gam	199.591	-62.970	3.31	2.15	9.19 1.6 ± 0.9	0.31 ± 0.07	...	...	1.31	1 Y l a I
695	2PBC J1320.2-4014	...	...	200.055	-40.248	5.02	...	4.97 0.3 ± 9.9	< 0.2	...	...	1.47	2 N h
696	2PBC J1320.3-7013	1RXS J132032.3-701451	X	200.088	-70.230	4.84	1.22	4.81 0.7 ± 0.4	0.3 ± 0.1	...	...	1.66	2 N h a b
697	2PBC J1320.6+6014	RBS 1252 2MASS J13204800+6019466	Sy1 QSO	200.145	60.275	4.56 3.67	1.43	5.30 0.3 ± 0.1	< 0.3	0.1000 0.3091	43.85 45.00	1.26	3 N h b b

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
698 2PBC J1321.1+0858	NGC5100	GiP	200.277	8.980	4.10	1.44	6.34 1.0 ± 0.6	0.4 ± 0.1	0.0319	43.34	1.61	1 N h a	
699 2PBC J1322.4-1644	MCG-03-34-063	Sy2	200.602	-16.727	2.61	0.08	14.03 2.8 ± 0.7	0.35 ± 0.05	0.0167	43.24	2.35	3 Y h a I	
700 2PBC J1325.4-4301	Cen A	BZU	201.362	-43.026	0.73	0.43	467.31 115.3 ± 0.4	0.436 ± 0.001	0.0018	42.92	37.40	1 Y h a I b F	
701 2PBC J1326.4-6207	4U 1323-62	LXB	201.606	-62.124	1.08	1.45	101.03 17.7 ± 0.3	0.298 ± 0.006	...	...	7.42	3 Y l a I	
702 2PBC J1328.2-2719	2MASX J13280995-2719544	GiC	202.056	-27.329	4.48	0.80	5.46 1.1 ± 0.6	0.3 ± 0.1	0.0417	43.66	1.48	3 N h a b	
703 2PBC J1329.6-1053	...	...	202.411	-10.885	4.25	...	5.97 1.0 ± 0.6	0.4 ± 0.1	...	...	1.71	3 N h	
704 2PBC J1331.2-2523	RHS 37	Sy1	202.816	-25.403	3.94	0.46	6.80 1.7 ± 1.1	0.46 ± 0.10	0.0264	43.43	1.49	3 Y h a b	
705 2PBC J1332.0+1116	2MASX J13315225+1116496	Sy1	202.984	11.283	4.14	0.94	6.23 1.0 ± 0.6	0.5 ± 0.1	0.0910	44.29	1.40	2 Y h a b	
706 2PBC J1332.0-0510	PKS 1329-049	BZQ	203.011	-5.175	4.44	0.87	5.55 1.1 ± 0.6	0.4 ± 0.1	2.1500	47.66	1.70	1 N h a f F	
707 2PBC J1332.1-7751	ESO 21-4	G	203.034	-77.863	4.00	2.04	6.60 1.4 ± 0.9	0.47 ± 0.10	0.0103	42.51	1.47	3 N h a	
708 2PBC J1333.3-3400	ESO 383-18	Sy2	203.348	-34.005	3.05	0.89	10.59 1.9 ± 1.0	0.14 ± 0.05	0.0130	42.86	1.45	2 Y h a I	
709 2PBC J1334.5-2324	ESO 509-66	Sy2	203.671	-23.417	3.78	1.81	7.27 2.1 ± 1.2	0.43 ± 0.08	0.0446	43.99	1.55	1 Y h a	
710 2PBC J1335.8+0301	NGC 5231	AGN	203.943	3.018	3.67	1.26	7.65 1.8 ± 1.0	0.40 ± 0.07	0.0216	43.27	1.65	3 Y h a	
711 2PBC J1335.8-3417	1H 1334-340	Sy1	203.973	-34.299	1.86	0.22	27.13 6.0 ± 0.4	0.29 ± 0.02	0.0078	42.92	1.63	1 Y h a I b	
712 2PBC J1338.1+0432	NGC 5252	Sy2	204.563	4.543	1.54	0.24	40.76 9.2 ± 0.4	0.46 ± 0.01	0.0222	44.01	4.95	3 Y h a I	
713 2PBC J1341.2+3022	Mrk 268	Sy2	205.292	30.365	2.77	0.79	12.64 1.6 ± 0.9	0.41 ± 0.06	0.0404	43.79	1.66	3 Y h a I	
714 2PBC J1341.2-1439	RBS 1303	Sy1	205.302	-14.652	3.30	0.43	9.21 1.9 ± 1.0	0.41 ± 0.08	0.0417	43.89	1.80	3 Y h a b	
715 2PBC J1341.9+3537	NGC 5273	Sy1	205.529	35.666	3.62	0.75	7.86 1.2 ± 0.8	0.42 ± 0.08	0.0035	41.55	1.70	2 Y h a f	
716 2PBC J1344.2+5551	Mrk 273	Sy2	206.066	55.861	4.78	3.96	4.91 0.6 ± 0.4	0.5 ± 0.2	0.0372	43.27	1.79	3 N h a	
717 2PBC J1344.2+1934	2MASX J13441569+1933596	LIN	206.095	19.608	4.31	3.03	5.83 1.1 ± 0.7	0.43 ± 0.10	...	...	1.67	1 Y h a	
718 2PBC J1345.2+5332	BZUJ1345+5332	BLA	206.320	53.522	4.76	4.50	4.93 0.6 ± 0.4	0.5 ± 0.2	0.1350	44.46	1.53	3 N l b b	
719 2PBC J1345.4+4141	NGC 5290	G	206.338	41.679	3.65	2.03	7.72 1.4 ± 0.9	0.50 ± 0.08	0.0086	42.37	1.66	3 Y h a b	
720 2PBC J1346.5+1923	1RXS J134628.5+192310	X	206.635	19.389	4.43	0.91	5.57 0.9 ± 0.6	0.5 ± 0.1	...	...	1.91	3 N h b b	
721 2PBC J1347.3+7321	8C 1345+735	Sy1	206.842	73.355	4.75	5.29	4.95 0.4 ± 0.2	0.3 ± 0.2	0.2900	45.05	1.44	3 N l b b	
722 2PBC J1347.4-3254	ABELL 3571	CIG	206.856	-32.910	4.22	2.73	6.05 0.7 ± 0.4	< 0.1	0.0414	43.50	1.62	2 Y h a	
723 2PBC J1347.5-6035	4U 1344-60	Sy1	206.874	-60.592	1.43	1.13	48.46 9.0 ± 0.3	0.40 ± 0.01	0.0130	43.53	1.73	1 Y l a I f	
724 2PBC J1348.7+2635	ABELL 1795	CIG	207.191	26.608	4.12	3.54	6.29 0.5 ± 0.3	< 0.1	0.0624	43.69	1.78	2 Y h a	
725 2PBC J1349.0+4443	...	...	207.263	44.718	4.69	...	5.07 0.9 ± 0.6	0.6 ± 0.1	...	...	1.50	1 N h	
726 2PBC J1349.2-3018	IC 4329A	Sy1	207.329	-30.306	1.06	0.20	107.25 26.0 ± 0.4	0.380 ± 0.005	0.0160	44.17	2.50	1 Y h a I b	
727 2PBC J1349.8+0205	RX J1349.8+0204	Sy1	207.474	2.089	3.16	0.62	9.98 1.4 ± 0.8	0.36 ± 0.07	0.0328	43.55	1.90	1 Y h a b	
728 2PBC J1350.6+2656	...	...	207.670	26.941	4.96	...	5.08 0.6 ± 0.4	0.3 ± 0.1	...	...	1.51	3 N h	
729 2PBC J1351.5-1815	RBS 1323	Sy1	207.890	-18.259	3.77	1.98	7.32 1.4 ± 0.8	0.4 ± 0.1	0.0120	42.64	1.94	1 N h b b	
730 2PBC J1353.1+6918	Mrk 279	Sy1	208.282	69.311	1.92	0.39	25.55 3.8 ± 0.4	0.44 ± 0.03	0.0306	43.91	1.97	1 Y h a b	
731 2PBC J1353.6-1125	...	...	208.414	-11.421	3.99	...	6.65 1.1 ± 0.7	0.3 ± 0.1	...	...	1.83	3 N h	
732 2PBC J1354.3-3746	PGC 049418	Sy2	208.574	-37.773	2.88	0.45	11.78 2.3 ± 1.3	0.41 ± 0.06	0.0516	44.16	1.79	1 Y h a I	
733 2PBC J1354.7+1325	...	...	208.681	13.430	4.71	...	5.02 0.9 ± 0.6	0.5 ± 0.1	...	...	1.58	3 N h	
734 2PBC J1355.5+3523	RX J1355.4+3523	X	208.895	35.386	4.13	1.39	6.27 1.0 ± 0.6	0.4 ± 0.1	...	...	1.64	1 N h b b	
735 2PBC J1355.8+3833	Mrk 0464	Sy1	208.966	38.576	2.92	0.35	11.44 1.9 ± 1.1	0.44 ± 0.06	0.0507	44.06	1.91	3 Y h a b	
736 2PBC J1356.0+1822	Mrk 463	Sy2	209.006	18.383	4.77	0.75	4.93 0.8 ± 0.5	0.3 ± 0.1	0.0503	43.65	1.40	2 N h a	
737 2PBC J1356.6-1930	ESO 578-9	Sy1	209.168	-19.509	4.04	1.49	6.51 1.1 ± 0.7	0.26 ± 0.09	0.0352	43.52	1.68	3 N h b b	
738 2PBC J1357.1+1919	4C 19.44	BZQ	209.287	19.317	4.73	1.02	4.99 0.8 ± 0.5	0.4 ± 0.1	0.7194	46.24	1.29	1 N h a b	
739 2PBC J1400.2+0500	2MASS J14001840+0502421	AGN	210.067	5.015	4.80	1.90	4.87 0.9 ± 0.6	0.4 ± 0.1	0.0342	43.40	1.91	3 N h b f	
740 2PBC J1400.7-6323	IGR J14003-6326	gam	210.220	-63.445	3.47	1.30	8.45 1.5 ± 0.8	0.24 ± 0.06	...	...	1.38	2 Y l a I	
741 2PBC J1405.5+4051	1RXS J140543.6+405115	X	211.385	40.859	4.88	2.12	5.21 0.3 ± 0.2	0.2 ± 0.2	0.0688	43.59	1.61	2 N h b b	
742 2PBC J1408.2-3023	2MASX J14080674-3023537	Sy1	212.045	-30.399	3.33	0.75	9.07 1.6 ± 0.9	0.23 ± 0.06	0.0236	43.32	1.39	1 Y h a	
743 2PBC J1409.9-0744	...	...	212.477	-7.738	4.92	...	5.14 0.6 ± 0.3	< 0.1	...	...	1.44	2 N h	
744 2PBC J1410.8-4227	2MASX J14104482-4228325	G	212.707	-42.454	4.50	1.59	5.43 1.1 ± 0.6	0.29 ± 0.10	0.0339	43.47	1.40	3 N h a	
745 2PBC J1412.2-3124	...	...	213.072	-31.408	4.80	...	4.87 0.7 ± 0.4	0.3 ± 0.2	...	...	1.55	3 N h	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
746	2PBC J1413.2-6519	Circinus Galaxy	213.293	-65.342	1.02	0.15	119.70 23.9 ± 0.3	0.353 ± 0.005	0.0014	42.02	1.87	3 Y 1 a I b	
747	2PBC J1413.2-0312	NGC 5506	213.312	-3.212	1.07	0.27	103.55 21.1 ± 0.3	0.364 ± 0.006	0.0060	43.23	2.69	1 Y h a I b	
748	2PBC J1414.2+1219	RX J1414.1+1218	213.515	12.331	4.57	1.97	5.28 0.6 ± 0.4	0.1 ± 0.1	...	...	1.54	1 N h b b	
749	2PBC J1416.8-1158	1RXS J141650.6-115845	214.200	-11.981	4.72	0.61	5.01 1.3 ± 0.8	0.4 ± 0.1	0.0985	44.50	1.90	3 N h b b	
750	2PBC J1416.8-4639	IGR J14175-4641	214.227	-46.660	3.15	2.58	9.99 2.0 ± 1.0	0.39 ± 0.06	0.0760	44.45	1.48	3 Y h a I	
751	2PBC J1417.9+2543	7C 1415+2556	214.480	25.733	4.48	0.65	5.46 0.7 ± 0.4	0.2 ± 0.1	0.2370	45.08	1.57	2 N h a b F	
752	2PBC J1417.9+2508	NGC 5548	214.485	25.138	1.69	0.74	33.20 6.5 ± 0.3	0.43 ± 0.02	0.0166	43.61	1.70	3 Y h a I b	
753	2PBC J1419.2+6804	2MASS J14184990+6804097	214.813	68.075	4.76	2.37	4.93 0.7 ± 0.5	0.6 ± 0.2	0.0770	43.98	1.50	1 N h a	
754	2PBC J1419.4-2639	Mrk 39	214.838	-26.637	2.37	0.51	16.82 4.2 ± 0.5	0.39 ± 0.03	0.0222	43.67	1.31	1 Y h a I b	
755	2PBC J1421.1-6243	H 1417-624	215.312	-62.709	2.87	0.70	11.80 1.9 ± 0.8	0.13 ± 0.05	...	...	3.01	3 N l b I	
756	2PBC J1421.4+4748	RBS 1378	215.372	47.789	2.71	0.09	13.11 1.7 ± 0.9	0.40 ± 0.06	0.0720	44.32	1.41	1 Y h a I b	
757	2PBC J1424.3+2436	NGC 5610	216.087	24.605	3.51	0.70	8.29 1.3 ± 0.7	0.45 ± 0.09	0.0169	42.91	1.64	3 N h a	
758	2PBC J1426.0+3748	ABELL 1914	216.479	37.833	3.30	1.30	9.20 0.6 ± 0.3	< 0.09	0.1710	44.85	1.75	2 Y h a b	
759	2PBC J1427.4+1952	Mrk 813	216.835	19.859	3.87	2.03	6.99 1.2 ± 0.7	0.4 ± 0.1	0.1310	44.73	1.53	3 Y h a b	
760	2PBC J1428.6+4239	H 1426+428	217.147	42.666	2.62	0.70	14.02 1.7 ± 0.4	0.32 ± 0.05	0.1290	44.90	1.89	3 Y h a I b F	
761	2PBC J1429.2+0119	Mrk 1383	217.294	1.299	3.35	1.27	8.99 1.8 ± 0.6	0.35 ± 0.06	0.0860	44.52	1.86	1 Y h a b	
762	2PBC J1429.8-6711	IGR J14298-6715	217.525	-67.250	3.60	4.39	7.92 1.4 ± 0.6	0.28 ± 0.07	...	...	1.26	1 Y h a I	
763	2PBC J1433.3-6115	IGR J14331-6112	218.347	-61.260	4.34	1.90	5.76 0.9 ± 0.6	0.4 ± 0.1	...	...	1.69	3 N l a I	
764	2PBC J1433.9+0526	NGC 5674	218.493	5.442	4.74	1.75	4.97 1.0 ± 0.6	0.4 ± 0.1	0.0249	43.13	2.06	3 N h a	
765	2PBC J1434.9+4839	NGC 5683	218.734	48.648	3.59	1.03	7.97 1.3 ± 0.7	0.33 ± 0.07	0.0410	43.72	1.37	1 Y h a b	
766	2PBC J1436.3+5848	Mrk 817	219.086	58.807	2.24	0.80	18.80 2.3 ± 0.4	0.35 ± 0.04	0.0312	43.71	1.38	1 Y h a b	
767	2PBC J1436.7-1615	1RXS J143649.6-161344	219.189	-16.254	4.66	1.80	5.11 1.1 ± 0.7	0.5 ± 0.2	0.1445	44.76	1.67	3 N h b b	
768	2PBC J1439.0+1413	2MASX J14391186+1415215	219.804	14.257	3.71	0.26	7.52 1.4 ± 0.9	0.42 ± 0.08	0.0714	44.24	1.49	1 Y h a	
769	2PBC J1440.9+5330	Mrk 477	220.214	53.512	3.04	2.04	10.64 1.0 ± 0.7	0.36 ± 0.09	0.0380	43.54	1.30	1 Y h a	
770	2PBC J1442.3+2218	1RXS J144218.9+221820	220.591	22.311	4.87	0.77	5.23 0.3 ± 0.3	< 0.2	0.0901	43.86	1.62	3 N h b b	
		MCG+04-35-004				3.12			...	...	
771	2PBC J1442.4-1714	NGC 5728	220.592	-17.239	1.89	0.95	26.45 7.4 ± 0.5	0.46 ± 0.02	0.0094	43.16	1.94	1 Y h a I	
772	2PBC J1442.8+1202	RBS 1420	220.705	12.045	4.83	2.05	4.82 0.3 ± 0.2	< 0.2	0.1630	44.51	1.26	2 N h a b F	
773	2PBC J1446.6-6416	IGR J14471-6414	221.743	-64.284	3.96	3.35	6.73 1.2 ± 0.8	0.5 ± 0.1	0.0530	43.89	1.35	3 Y l a I f	
774	2PBC J1448.7-5942	PBCX J144843.3-594215	222.178	-59.710	3.79	0.34	7.25 0.7 ± 0.4	< 0.09	...	...	2.07	2 N l a I	
775	2PBC J1448.8-4008	...	222.202	-40.144	5.07	...	4.89 0.8 ± 0.5	0.2 ± 0.1	...	...	1.39	3 N h	
776	2PBC J1449.0-5533	IGR J14493-5534	222.250	-55.594	3.33	1.93	9.09 2.5 ± 1.4	0.39 ± 0.05	...	...	1.66	1 Y l a I	
777	2PBC J1449.2+0405	...	222.318	4.097	4.98	...	5.04 0.7 ± 0.4	0.4 ± 0.2	...	...	1.83	1 N l	
778	2PBC J1451.2-5539	IGR J14515-5542	222.790	-55.660	2.32	3.46	17.60 4.0 ± 0.5	0.42 ± 0.03	0.0180	43.46	1.89	3 Y l a I b	
779	2PBC J1453.0+2553	RX J1453.1+2554	223.277	25.905	2.88	0.40	11.77 1.9 ± 1.1	0.42 ± 0.06	...	...	1.91	3 Y h a b	
780	2PBC J1453.5-5522	IGR J14536-5522	223.375	-55.399	3.29	2.75	9.29 1.5 ± 0.8	0.18 ± 0.06	...	...	1.62	3 Y l a I b	
781	2PBC J1455.1-5132	IGR J14552-5133	223.812	-51.582	3.49	0.78	8.37 1.9 ± 1.1	0.38 ± 0.07	0.0160	43.04	1.50	1 Y h a I f	
782	2PBC J1457.8-4306	IC 4518A	224.447	-43.141	2.55	1.34	14.68 2.9 ± 0.7	0.28 ± 0.04	0.0160	43.22	1.46	3 Y h a I	
783	2PBC J1500.5-1933	...	225.139	-19.551	5.00	...	5.01 0.8 ± 2.3	0.2 ± 0.1	...	...	1.71	3 N h	
784	2PBC J1503.9+1027	Mrk 841	225.992	10.449	2.46	1.01	15.67 2.9 ± 0.6	0.40 ± 0.04	0.0364	43.95	2.04	3 Y h a I b	
785	2PBC J1506.2+0345	Mrk 1392	226.572	3.760	4.59	6.07	5.25 1.5 ± 0.9	0.5 ± 0.1	0.0361	43.64	1.01	3 N l b f	
786	2PBC J1506.6+0349	2MASX J15064412+0351444	226.642	3.826	3.79	3.33	7.24 1.6 ± 1.1	0.6 ± 0.1	...	...	1.77	1 Y h a	
787	2PBC J1508.5-4952	...	227.142	-49.882	4.23	...	6.02 1.7 ± 1.1	0.7 ± 0.1	...	...	1.54	1 N h	
788	2PBC J1508.7-0011	Mrk 1393	227.192	-0.185	4.81	2.10	4.85 1.1 ± 0.7	0.4 ± 0.1	0.0542	43.90	1.76	3 N h a f	
789	2PBC J1509.4-6649	IGR J15094-6649	227.366	-66.829	2.55	0.38	14.67 2.1 ± 0.7	0.18 ± 0.04	...	...	1.64	3 N h b I b	
790	2PBC J1510.8+0545	ABELL 2029	227.734	5.762	3.42	0.64	8.65 1.0 ± 0.5	< 0.07	0.0774	44.23	1.73	2 Y h a	
791	2PBC J1512.0-2118	RBS 1473	228.008	-21.313	2.87	0.52	11.84 2.7 ± 0.9	0.28 ± 0.04	0.0443	44.10	1.91	3 Y h a I b	
792	2PBC J1512.8-0906	PKS 1510-08	228.206	-9.086	2.33	0.86	17.44 5.0 ± 2.5	0.56 ± 0.04	0.3600	46.27	1.97	1 Y h a f F	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
793 2PBC J1513.8-5909	PSR B1509-58	Psr	228.484	-59.152	1.11	0.88	94.30 21.9 ± 0.4	0.441 ± 0.006	...	...	1.64	1 Y 1 a I b	
794 2PBC J1513.8-8123	2MASX J15144217-8123377	Sy1	228.592	-81.398	3.03	0.77	10.75 2.0 ± 1.0	0.41 ± 0.06	0.0683	44.36	1.38	3 Y h a	
795 2PBC J1514.7-4021	6dFGS gJ151448.7-402153	G	228.684	-40.366	4.55	0.88	5.32 0.9 ± 0.6	0.4 ± 0.2	0.0237	43.05	1.49	1 N h a I b	
796 2PBC J1515.2+4202	NGC 5899	LIN	228.747	42.057	3.29	0.86	9.26 1.4 ± 0.8	0.39 ± 0.07	0.0085	42.36	1.62	1 Y h a	
	PBCX J151509.1+420826	X				5.36			...	...	
797 2PBC J1517.7-2419	Ap Lib	BZB	229.458	-24.371	4.30	1.83	5.84 1.9 ± 1.1	0.48 ± 0.10	0.0490	44.02	1.39	1 Y h a b F	
798 2PBC J1519.4+6536	MCG+11-19-006	Sy2	229.854	65.604	3.91	0.94	6.87 0.9 ± 0.5	0.3 ± 0.1	0.0440	43.61	1.49	3 N h a	
799 2PBC J1520.2-0433	1RXS J152017.4-043621	X	230.066	-4.555	4.78	3.07	4.90 0.7 ± 0.4	0.3 ± 0.2	...	...	1.23	1 N h b b	
800 2PBC J1520.6-5710	Cir X-1	LXB	230.162	-57.174	1.41	0.49	50.15 4.3 ± 0.5	0.04 ± 0.01	...	...	12.77	2 Y 1 a I b	
801 2PBC J1533.4-0844	1E 1530-085	Sy2	233.357	-8.724	2.80	1.87	12.40 3.4 ± 1.1	0.43 ± 0.05	0.0230	43.61	1.89	1 Y h a	
802 2PBC J1536.0+5754	Mrk 290	Sy1	234.012	57.886	2.35	1.71	17.11 2.2 ± 0.6	0.40 ± 0.05	0.0296	43.64	1.43	1 Y h a b	
803 2PBC J1536.1-5749	IGR J15360-5750	X	234.048	-57.827	3.91	1.64	6.88 2.2 ± 1.2	0.43 ± 0.06	...	...	1.53	3 Y 1 a I	
804 2PBC J1538.0+6744	...	...	234.525	67.744	4.95	...	5.08 0.6 ± 0.4	0.4 ± 0.1	...	...	1.44	3 N h	
805 2PBC J1539.1-6228	SWIFT J1539.2-6227	X	234.779	-62.478	2.69	0.90	13.29 2.4 ± 0.6	0.38 ± 0.05	...	...	8.63	3 N h a	
806 2PBC J1540.3+1415	1RXS J154009.4+141116	X	235.083	14.258	4.60	4.92	5.24 0.9 ± 0.5	0.3 ± 0.1	...	...	1.38	3 N 1 a b	
807 2PBC J1541.7-5030	...	...	235.425	-50.507	5.02	...	4.98 0.9 ± 0.5	0.4 ± 0.1	...	...	1.89	3 N 1	
808 2PBC J1542.4-5222	H 1538-522	HXB	235.612	-52.373	0.93	0.96	166.91 27.6 ± 0.3	0.109 ± 0.003	...	...	4.58	2 Y 1 a I b	
809 2PBC J1546.5+6931	2MASX J15462424+6929102	G	236.656	69.485	4.02	1.94	6.54 0.5 ± 0.3	0.2 ± 0.1	...	...	1.62	1 Y h a	
	1RXS J154534.5+692925	X				5.51			...	...	
810 2PBC J1547.3-6409	...	...	236.838	-64.161	4.65	...	5.13 0.8 ± 0.4	0.3 ± 0.1	...	...	1.57	3 N h	
811 2PBC J1547.3+3144	...	...	236.841	31.748	5.00	...	5.01 0.6 ± 0.3	0.2 ± 0.1	...	...	1.60	3 N h	
812 2PBC J1547.3+2050	4C 21.45	Sy1	236.873	20.875	3.97	3.31	6.69 0.6 ± 0.4	0.2 ± 0.1	0.2640	45.27	1.79	3 Y h a b	
813 2PBC J1547.9-6233	4U 1543-624	LXB	237.013	-62.566	1.52	0.97	42.03 4.5 ± 0.4	0.05 ± 0.01	...	...	1.58	2 Y h a I b	
814 2PBC J1548.1-4528	IGR J15479-4529	CV*	237.045	-45.473	1.53	0.75	41.76 8.3 ± 0.3	0.29 ± 0.01	...	...	1.88	3 Y h a I b	
815 2PBC J1548.4-1344	NGC 5995	Sy2	237.107	-13.759	3.25	0.17	9.48 3.7 ± 0.6	0.37 ± 0.04	0.0250	43.72	1.53	3 Y h a I b	
816 2PBC J1548.5-3208	ESO 450-16	G	237.148	-32.150	4.77	2.39	4.92 0.8 ± 0.5	0.3 ± 0.1	0.0488	43.67	1.85	3 N h a b	
817 2PBC J1550.7-5418	SGR J1550-5418	Psr	237.675	-54.305	3.10	1.75	10.29 3.0 ± 1.8	0.54 ± 0.06	...	...	4.58	1 N 1 a I	
818 2PBC J1553.4+2348	2MASX J15534361+2348259	G	238.371	23.811	4.19	3.32	6.12 1.2 ± 0.7	0.38 ± 0.09	0.1150	44.62	1.88	3 N h a f	
819 2PBC J1554.6+3242	2MASX J15541741+3238381	AGN	238.651	32.711	4.53	5.64	5.35 1.0 ± 0.5	0.4 ± 0.1	0.0483	43.72	1.41	1 N h a b	
820 2PBC J1554.6-3734	...	...	238.668	-37.572	4.84	...	4.81 1.1 ± 0.6	0.4 ± 0.1	...	...	1.95	1 N h	
821 2PBC J1555.0-6225	...	...	238.755	-62.418	4.52	...	5.39 1.0 ± 0.6	0.4 ± 0.1	...	...	1.44	3 N h	
822 2PBC J1555.5+1109	PG 1553+113	BZB	238.887	11.209	4.40	2.75	5.63 0.7 ± 0.4	0.3 ± 0.1	...	...	1.46	2 Y h a b F	
823 2PBC J1557.6-7913	PKS 1549-79	BZU	239.402	-79.230	3.95	1.78	6.75 1.1 ± 0.6	0.36 ± 0.09	0.1495	44.83	1.53	3 N h a	
824 2PBC J1557.7-5425	H 1553-542	HXB	239.440	-54.412	2.39	0.53	16.63 1.9 ± 1.0	< 0.04	...	...	7.36	2 Y 1 a	
825 2PBC J1558.4+2713	ABELL 2142	CIG	239.607	27.231	2.65	2.14	13.67 1.5 ± 0.8	0.18 ± 0.04	0.0899	44.54	1.64	1 Y h a	
826 2PBC J1559.4+2556	T CrB	Sy*	239.886	25.923	1.62	0.56	36.71 5.9 ± 0.3	0.26 ± 0.02	...	...	1.61	3 Y h a	
827 2PBC J1601.0-6044	1H 1556-605	LXB	240.243	-60.760	2.56	1.40	14.57 1.2 ± 0.6	< 0.05	...	...	1.40	2 Y h a I b	
828 2PBC J1601.8-6103	LEDA 2801977	AG?	240.455	-61.054	4.98	5.64	5.04 0.8 ± 0.5	0.3 ± 0.1	0.0117	42.38	1.41	2 N h a I b	
829 2PBC J1602.3-7544	CIZA J1601.7-7544	CIG	240.591	-75.744	4.75	2.17	4.95 0.6 ± 0.4	0.2 ± 0.1	0.1530	44.62	1.55	3 N h a b	
830 2PBC J1606.0-7250	...	...	241.503	-72.842	2.90	...	11.59 2.0 ± 1.1	0.41 ± 0.06	...	...	1.44	3 N h	
831 2PBC J1608.8+8501	8C 1616+851	Sy1	242.212	85.029	4.12	1.89	6.28 1.0 ± 0.7	0.5 ± 0.1	0.1830	44.98	1.55	1 N h a f	
832 2PBC J1612.1-6037	IGR J16119-6036	Sy1	243.033	-60.642	2.92	2.10	11.49 2.6 ± 0.6	0.33 ± 0.04	0.0158	43.17	1.30	1 Y h a I	
833 2PBC J1612.7-5225	H 1608-522	LXB	243.185	-52.424	0.76	0.22	389.66 73.7 ± 0.3	0.328 ± 0.001	...	...	105.95	3 Y 1 a I	
834 2PBC J1614.1+6542	Mrk 876	Sy1	243.547	65.726	3.33	1.51	9.05 1.0 ± 0.6	0.33 ± 0.09	0.1200	44.60	1.51	3 Y h a b	
835 2PBC J1614.4-6050	ABELL 3627	CIG	243.572	-60.852	3.42	1.16	8.66 0.9 ± 0.5	< 0.08	0.0162	42.72	1.50	2 Y h a	
836 2PBC J1615.5+3218	...	...	243.879	32.301	4.74	...	4.98 0.6 ± 0.3	0.3 ± 0.1	...	...	1.45	2 N h	
837 2PBC J1616.5-4957	IGR J16167-4957	CV*	244.143	-49.989	2.64	0.82	13.79 2.4 ± 0.7	0.20 ± 0.04	...	...	1.47	3 Y 1 a I b	
838 2PBC J1617.8+3224	4C 32.51	Sy1	244.445	32.417	2.93	2.63	11.42 1.7 ± 1.0	0.44 ± 0.08	0.1517	45.01	1.69	1 Y h a f	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b		Hardness ratio (R_{30-150}/R_{14-150})	Redshift	$\log L_{14-150}^c$ (erg s ⁻¹)	Var Flag 1 ^d Flag 2 ^e				
												A	B	C	D	I	R	F
839 2PBC J1618.1-5405	...	...	244.533	-54.097	4.73	...	4.99	1.0 ± 0.7	0.4 ± 0.1	...	...	1.61	1	N	I	
840 2PBC J1618.5-5926	WKK 6471	Sy1	244.659	-59.433	3.87	1.34	6.98	1.4 ± 0.8	0.48 ± 0.09	0.0350	43.60	1.47	1	Y	h	a I b
841 2PBC J1619.5-4946	IGR J16195-4945	HX?	244.843	-49.765	2.41	2.14	16.31	2.8 ± 0.5	0.20 ± 0.03	...	...	1.84	3	Y	l	a I
842 2PBC J1620.3+8101	MCG+14-08-004	Sy2	244.876	81.035	3.06	0.81	10.56	1.3 ± 0.7	0.33 ± 0.07	...	...	1.49	1	Y	h	a
843 2PBC J1619.5-2807	IGR J16194-2810	LXB	244.882	-28.127	2.76	2.33	12.71	2.7 ± 0.7	0.26 ± 0.04	...	...	1.91	3	Y	h	a I
844 2PBC J1619.9-1538	Sco X-1	LXB	244.971	-15.638	0.58	0.48	4374.13	1328.8 ± 0.5	0.0098 ± 0.0001	...	...	9.73	2	Y	h	a I
845 2PBC J1620.8-5130	IGR J16207-5129	HXB	245.188	-51.518	2.02	0.97	22.99	4.1 ± 0.4	0.28 ± 0.02	...	...	1.70	3	Y	l	a I
846 2PBC J1624.4-3313	1RXS J162354.8-331230	X	246.105	-33.220	4.56	6.40	5.30	0.9 ± 0.5	0.2 ± 0.1	...	...	1.59	3	N	l	b b
847 2PBC J1625.5+8530	VII Zw 653	Sy1	246.495	85.475	3.92	1.33	6.83	0.7 ± 0.4	0.3 ± 0.1	0.0629	43.83	1.47	1	N	h	b b
848 2PBC J1626.0+4351	87GB 162418.8+435342	BZQ	246.505	43.854	4.56	4.26	5.30	0.5 ± 0.3	0.2 ± 0.2	1.0480	46.75	1.50	3	N	h	a b
849 2PBC J1626.0-2952	PKS 1622-29	BZU	246.540	-29.819	4.17	2.44	6.16	2.1 ± 1.3	0.51 ± 0.08	0.8149	46.72	1.71	1	Y	h	a f F
850 2PBC J1626.5-5155	SWIFT J1626.6-5156	HXB	246.657	-51.937	2.10	0.37	21.34	2.9 ± 0.7	0.09 ± 0.03	...	...	6.62	2	Y	l	a I
851 2PBC J1627.9-4911	H 1624-490	LXB	247.027	-49.175	1.24	1.55	69.71	6.5 ± 0.5	0.027 ± 0.009	...	...	1.95	2	Y	l	a I b
852 2PBC J1628.0+5145	Mrk 1498	Sy1	247.040	51.769	1.98	0.91	23.92	3.9 ± 0.4	0.39 ± 0.03	0.0556	44.45	1.82	3	Y	h	a
853 2PBC J1628.1-4839	IGR J16283-4838	HXB	247.069	-48.650	2.11	0.96	21.11	3.2 ± 0.6	0.17 ± 0.03	...	...	4.04	3	Y	l	a I
854 2PBC J1628.6-5025	IGR J16287-5021	gam	247.171	-50.431	4.56	3.93	5.31	0.8 ± 0.4	< 0.1	...	...	1.52	2	N	l	a I
855 2PBC J1630.5+3924	2MASX J16303265+3923031	Sy2	247.626	39.409	4.36	1.55	5.72	1.0 ± 0.7	0.5 ± 0.1	0.0300	43.32	1.65	1	N	h	a
856 2PBC J1631.7-4848	IGR J16318-4848	HXB	247.906	-48.810	0.85	1.81	230.15	45.3 ± 0.3	0.269 ± 0.002	...	...	26.32	3	Y	l	a I
857 2PBC J1631.9-5616	...	...	247.981	-56.272	5.07	...	4.89	0.6 ± 0.3	0.2 ± 0.1	...	...	1.55	3	N	h	
858 2PBC J1632.0-4751	IGR J16320-4751	HXB	248.016	-47.854	0.91	1.26	173.70	31.3 ± 0.3	0.173 ± 0.003	...	...	15.88	3	Y	l	a I
859 2PBC J1632.2-6727	4U 1626-67	LXB	248.077	-67.468	0.81	0.40	282.46	32.8 ± 0.2	0.062 ± 0.002	...	...	23.75	2	Y	h	a I b
860 2PBC J1632.7-4727	IGR J16328-4726	gam	248.301	-47.501	2.51	5.86	15.11	3.2 ± 0.8	0.31 ± 0.03	...	...	1.92	3	Y	l	a I
861 2PBC J1635.1-5804	ESO 137-34	Sy2	248.780	-58.082	4.17	0.88	6.16	1.8 ± 1.1	0.55 ± 0.10	0.0091	42.51	1.72	3	N	h	a I
862 2PBC J1638.5-6421	TRIANGULUM A	CIG	249.598	-64.365	2.41	1.36	16.32	1.8 ± 0.9	0.06 ± 0.04	0.0500	44.06	1.57	2	Y	h	a I b
863 2PBC J1638.5-2058	1RXSJ163830.9-205520	AGN	249.622	-20.944	4.59	1.26	5.24	1.8 ± 1.0	0.40 ± 0.08	0.0269	43.47	2.26	3	Y	h	a I b
864 2PBC J1639.1-4641	IGR J16393-4643	HXB	249.796	-46.693	1.43	1.15	48.41	8.1 ± 0.3	0.073 ± 0.009	...	...	2.45	2	Y	l	a I
865 2PBC J1639.8-5611	...	...	249.960	-56.193	4.85	...	5.27	0.5 ± 0.3	0.2 ± 0.1	...	...	1.75	2	N	h	
866 2PBC J1640.9-5344	H 1636-536	LXB	250.242	-53.745	0.86	0.53	218.20	32.1 ± 0.3	0.171 ± 0.002	...	...	31.98	2	Y	l	a I b
867 2PBC J1641.7-4532	IGR J16418-4532	HXB	250.449	-45.542	1.71	0.59	32.57	6.7 ± 0.4	0.14 ± 0.01	...	...	2.46	2	Y	l	a I
868 2PBC J1643.0+3951	4C 39.48	BZQ	250.742	39.809	2.97	0.17	11.15	2.2 ± 1.3	0.59 ± 0.07	0.5930	46.39	1.40	1	Y	h	a b
869 2PBC J1645.8-4536	GX 340+0	LXB	251.447	-45.588	0.73	1.37	465.31	54.4 ± 0.2	0.019 ± 0.001	...	...	28.00	2	Y	l	a I b
870 2PBC J1648.2-4511	IGR J16479-4514	HXB	251.963	-45.230	1.75	3.18	31.14	7.1 ± 0.3	0.21 ± 0.01	...	...	3.74	3	Y	l	a I
871 2PBC J1648.3-3034	IGR J16482-3036	Sy1	252.055	-30.587	2.82	0.80	12.22	3.9 ± 1.4	0.48 ± 0.04	0.0310	43.92	2.08	1	Y	h	a I
872 2PBC J1649.3-1739	...	...	252.336	-17.655	4.81	...	4.85	1.4 ± 0.8	0.31 ± 0.08	...	...	1.83	3	N	h	
873 2PBC J1649.4-4349	IGR J16493-4348	LX?	252.364	-43.827	2.13	0.49	20.79	4.3 ± 0.4	0.28 ± 0.02	...	...	2.08	3	Y	l	a I
874 2PBC J1649.8-3305	IGR J16500-3307	CV*	252.461	-33.115	3.36	2.17	8.93	2.2 ± 0.7	0.29 ± 0.05	...	...	1.76	3	Y	h	a I
875 2PBC J1650.6+0434	2MASX J16504275+0436180	Sy2	252.663	4.589	3.60	1.31	7.91	2.1 ± 1.3	0.48 ± 0.08	0.0320	43.68	1.62	3	Y	h	a I
876 2PBC J1651.9-5914	ESO 138-1	Sy2	252.924	-59.250	2.76	2.95	12.68	2.3 ± 0.5	0.31 ± 0.05	0.0091	42.63	1.50	3	Y	h	a I
877 2PBC J1652.2+5554	MCG+09-28-001	Sy2	253.070	55.920	3.26	0.90	9.44	1.4 ± 0.8	0.39 ± 0.07	0.0290	43.44	1.64	1	Y	h	a
878 2PBC J1653.0+0223	NGC 6240	LIN	253.261	2.396	1.90	0.92	26.13	6.4 ± 0.5	0.47 ± 0.03	0.0243	43.93	1.63	1	Y	h	a I b
879 2PBC J1653.8+3945	Mrk 501	BZB	253.447	39.769	1.90	1.08	26.05	4.2 ± 0.3	0.29 ± 0.02	0.0336	44.04	2.50	3	Y	h	a I b F
880 2PBC J1653.9-3950	GRO J1655-40	LXB	253.499	-39.848	1.45	0.15	47.35	11.8 ± 0.3	0.36 ± 0.01	...	...	25.29	3	Y	l	a I
881 2PBC J1654.7-1914	1RXS J165443.5-191620	X	253.675	-19.246	4.05	1.82	6.47	1.4 ± 0.8	0.12 ± 0.07	...	...	1.37	3	N	h	a I b
882 2PBC J1656.0-5202	IGR J16558-5203	Sy1	254.032	-52.062	2.23	0.32	18.98	3.7 ± 0.5	0.39 ± 0.03	0.0540	44.41	1.51	3	Y	h	a I b
883 2PBC J1656.2-3303	SWIFT J1656.3-3302	QSO	254.060	-33.047	2.20	0.80	19.43	6.0 ± 1.7	0.54 ± 0.03	2.4000	48.17	2.16	3	Y	h	a I f ?
884 2PBC J1657.8+3520	Her X-1	LXB	254.457	35.339	0.68	0.18	749.72	84.8 ± 0.2	0.0822 ± 0.0009	...	...	93.55	2	Y	h	a I b
885 2PBC J1700.2-4221	AX J1700.2-4220	HXB	255.079	-42.299	2.94	2.47	11.30	2.6 ± 0.6	0.27 ± 0.05	...	...	2.27	3	Y	l	a I
886 2PBC J1700.8-4139	OAO 1657-415	HXB	255.206	-41.664	0.76	0.48	388.57	92.9 ± 0.3	0.247 ± 0.001	...	...	77.59	1	Y	l	a I

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	<i>SNR</i>	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (<i>R</i> _{30–150} / <i>R</i> _{14–150})	Redshift	log <i>L</i> _{14–150} ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
887 2PBC J1701.0-4610	XTE J1701-462	LXB	255.255	-46.184	1.08	0.48	100.62	12.0 ± 0.2	0.010 ± 0.005	...	...	54.69	2 Y 1 a I	
888 2PBC J1701.0+2923	MCG+05-40-026	Sy2	255.256	29.389	4.60	1.73	5.22	0.7 ± 0.4	0.3 ± 0.1	0.0361	43.33	1.74	2 N h a b	
889 2PBC J1701.6-4307	...	...	255.413	-43.124	4.56	...	5.31	0.9 ± 0.5	0.2 ± 0.1	...	...	1.56	1 N l	
890 2PBC J1701.7-4052	XTE J1701-407	LXB	255.437	-40.868	2.35	0.57	17.14	4.2 ± 0.5	0.32 ± 0.03	...	...	8.15	1 N l a I	
891 2PBC J1702.8-4847	GX 339-4	LXB	255.716	-48.786	0.81	0.46	281.59	64.3 ± 0.3	0.444 ± 0.002	...	...	81.15	1 Y l a I b	
892 2PBC J1703.9-3750	4U 1700-377	HXB	255.981	-37.842	0.63	0.28	1355.45	313.0 ± 0.3	0.2522 ± 0.0003	...	...	28.75	3 Y l a I b	
893 2PBC J1704.0-4431	2MASS J17041207-4431311	IR	256.012	-44.533	4.99	1.71	5.03	0.6 ± 0.4	0.2 ± 0.1	...	...	1.91	2 N l a f	
894 2PBC J1704.0+7836	ABELL 2256	CIG	256.072	78.630	3.31	5.49	9.18	0.4 ± 0.2	< 0.2	0.0581	43.61	1.58	2 Y h a	
895 2PBC J1705.7-3625	GX 349+2	LXB	256.447	-36.421	0.67	0.55	805.27	80.1 ± 0.2	0.0051 ± 0.0007	...	...	5.12	2 Y l a I b	
896 2PBC J1706.2-4302	H 1702-429	LXB	256.559	-43.043	0.86	0.47	217.95	43.9 ± 0.3	0.269 ± 0.002	...	...	46.43	3 Y l a I	
897 2PBC J1706.2-6143	SWIFT J1706.6-6146	X	256.573	-61.714	1.61	0.18	36.90	7.2 ± 0.3	0.36 ± 0.02	...	...	2.10	3 Y h a I	
898 2PBC J1706.5+2358	4U 1700+24	LXB	256.655	23.992	2.88	1.37	11.78	2.1 ± 0.8	0.26 ± 0.05	...	...	3.30	3 Y h a b	
899 2PBC J1708.7-4009	RX J170849.0-400910	XB*	257.176	-40.155	3.57	1.28	8.04	3.0 ± 1.9	0.59 ± 0.07	...	...	1.68	1 N l a I b	
900 2PBC J1708.8-3219	4U 1705-32	LXB	257.212	-32.323	2.70	0.89	13.19	3.5 ± 0.7	0.37 ± 0.03	...	...	2.13	3 Y l a I	
901 2PBC J1708.8-4406	H 1705-440	LXB	257.225	-44.110	0.83	0.50	247.95	29.7 ± 0.2	0.089 ± 0.002	...	...	29.96	3 Y l a I	
902 2PBC J1709.4-3624	IGR J17091-3624	BH?	257.352	-36.421	1.69	5.56	33.42	8.1 ± 0.4	0.39 ± 0.02	...	...	10.42	1 Y l a I	
903 2PBC J1709.5-2639	RX J1709.5-2639	LXB	257.391	-26.665	2.85	0.93	12.00	3.1 ± 0.8	0.41 ± 0.04	...	...	4.81	1 N h b I b	
904 2PBC J1709.7-2349	1RXS J170944.9-234658	X	257.439	-23.820	4.81	2.22	4.86	1.0 ± 0.6	0.3 ± 0.1	...	...	1.79	3 N h a b	
905 2PBC J1710.2-2807	XTE J1710-281	LXB	257.538	-28.122	2.20	0.93	19.52	4.7 ± 0.4	0.29 ± 0.02	...	...	2.20	1 Y h a I b	
906 2PBC J1711.8-3933	TeV J1712-3932	gam	257.972	-39.559	4.62	3.76	5.19	1.1 ± 0.6	0.24 ± 0.09	...	...	2.19	3 N l b	
907 2PBC J1712.3-2320	Oph Cluster	CIG	258.093	-23.353	1.50	1.04	43.75	7.3 ± 0.3	0.065 ± 0.009	0.0280	44.14	2.02	2 Y h a I b	
908 2PBC J1712.4-4050	4U 1708-40	LXB	258.136	-40.839	2.73	1.67	12.94	1.5 ± 0.9	0.14 ± 0.03	...	...	1.57	2 Y l a I b	
909 2PBC J1712.6-3737	SAX J1712.6-3739	LXB	258.144	-37.650	1.55	0.40	40.20	8.8 ± 0.4	0.24 ± 0.01	...	...	3.55	3 Y l a I b	
910 2PBC J1712.6-2415	V2400 Oph	DQ*	258.162	-24.258	2.11	0.91	21.11	4.2 ± 0.4	0.13 ± 0.02	...	...	1.75	3 Y h a I b	
911 2PBC J1715.2-5448	1RXS J171535.6-545015	X	258.821	-54.810	4.94	3.14	5.10	0.8 ± 0.5	0.3 ± 0.1	...	...	1.48	3 N h b b	
912 2PBC J1717.1-6249	NGC 6300	Sy2	259.272	-62.834	1.51	1.12	43.23	8.3 ± 0.3	0.38 ± 0.01	0.0037	42.40	1.59	1 Y h a I	
913 2PBC J1719.5+4858	Arp 102B	BZU	259.881	48.992	3.07	2.86	10.46	2.1 ± 1.2	0.41 ± 0.05	0.0250	43.48	1.25	1 Y h a I b	
914 2PBC J1719.6-4100	IGR J17195-4100	CV*	259.918	-41.021	2.34	0.90	17.30	3.9 ± 0.5	0.18 ± 0.02	...	...	1.59	2 Y l a I b	
915 2PBC J1720.1-3116	IGR J17200-3116	HXB	260.035	-31.282	2.93	0.53	11.41	2.7 ± 0.8	0.08 ± 0.03	...	...	1.75	2 Y l a I b	
916 2PBC J1720.1-5146	1RXS J172032.0-514414	X	260.045	-51.778	4.16	4.06	6.18	0.9 ± 0.5	0.18 ± 0.09	...	...	1.77	2 N h b b	
917 2PBC J1721.8+4315	FIRST J172201.9+431523	Sy1	260.465	43.256	4.34	1.88	5.76	0.8 ± 0.5	0.4 ± 0.1	0.1390	44.64	1.51	1 N h a b	
918 2PBC J1722.8-1247	V* RY Ser	CV*	260.723	-12.793	4.93	3.39	5.12	1.0 ± 0.6	0.20 ± 0.10	...	...	1.89	1 N h b f	
919 2PBC J1723.2+3417	4C 34.47	Sy1	260.815	34.288	3.77	1.28	7.31	1.0 ± 0.6	0.26 ± 0.09	0.2059	45.14	1.75	2 N h a b	
920 2PBC J1723.5+3631	RBS 1645	Sy1	260.856	36.506	3.44	0.49	8.55	1.3 ± 0.7	0.28 ± 0.07	0.0400	43.69	1.49	1 N h b b	
921 2PBC J1725.2-3616	IGR J17252-3616	HXB	261.311	-36.270	1.43	1.04	49.04	10.2 ± 0.3	0.144 ± 0.009	...	...	5.26	3 Y l a I ?	
922 2PBC J1725.5-3256	IGR J17254-3257	LXB	261.368	-32.936	2.65	1.29	13.66	3.5 ± 0.6	0.32 ± 0.03	...	...	1.68	3 Y l a I b	
923 2PBC J1727.6-3047	4U 1722-30	LXB	261.895	-30.791	0.93	0.72	161.31	41.8 ± 0.3	0.310 ± 0.003	...	...	17.82	3 Y l a I b	
924 2PBC J1729.4-0312	...	...	262.351	-3.203	5.03	...	4.96	0.6 ± 0.3	0.2 ± 0.1	...	...	1.68	2 N h	
925 2PBC J1730.3-0559	IGR J17303-0601	CV*	262.581	-6.002	2.02	0.76	23.12	6.5 ± 0.4	0.33 ± 0.02	...	...	1.58	1 Y h a I b	
926 2PBC J1731.7-1657	3A 1728-169	LXB	262.933	-16.957	0.84	0.30	242.68	24.3 ± 0.2	0.008 ± 0.002	...	...	2.78	2 Y h a I b	
927 2PBC J1731.9-1914	NOVA Oph 1998	No*	262.978	-19.248	4.24	1.51	5.98	1.4 ± 0.8	0.38 ± 0.09	...	...	1.44	3 N h a I b	
928 2PBC J1731.9-3349	GX 354-0	LXB	262.993	-33.814	0.74	1.27	429.27	85.0 ± 0.3	0.186 ± 0.001	...	...	69.66	3 Y l a I b	
929 2PBC J1732.0-2444	GX 1+4	LXB	263.007	-24.736	0.74	0.57	436.34	102.3 ± 0.3	0.345 ± 0.001	...	...	90.49	1 Y l a I f	
930 2PBC J1733.4-3322	RAPID BURSTER	LXB	263.375	-33.377	2.24	1.37	18.83	2.9 ± 0.7	0.12 ± 0.02	...	...	8.08	2 N l a I	
931 2PBC J1734.8-2043	IGR J17348-2045	gam	263.721	-20.732	4.56	1.58	5.31	0.9 ± 0.5	0.25 ± 0.10	...	...	1.49	1 N h b I	
	[KRL2007b] 249	gam				1.74				...	...	
932 2PBC J1735.4-3256	IGR J17354-3255	gam	263.867	-32.939	2.81	1.47	12.27	2.1 ± 1.2	0.24 ± 0.05	...	...	2.45	3 Y l a I	
933 2PBC J1735.7+2047	MCG+03-45-003	Sy2	263.915	20.804	3.45	1.65	8.54	1.7 ± 1.0	0.40 ± 0.07	0.0241	43.35	1.66	1 Y h b	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
934	2PBC J1737.4-2908	GRS 1734-292	264.377	-29.153	1.65	1.20	35.32	10.1 ± 0.4	0.37 ± 0.01	0.0214	44.02	2.24	3 Y 1 a I b	
935	2PBC J1737.7-5953	ESO 139-12	264.456	-59.904	3.62	2.57	7.84	1.6 ± 0.9	0.40 ± 0.08	0.0174	43.04	1.73	1 Y h a	
936	2PBC J1738.2-2700	SLX 1735-269	264.575	-26.993	1.12	0.17	91.40	21.8 ± 0.4	0.345 ± 0.006	...	...	2.99	1 Y 1 a I b ?
937	2PBC J1738.9-4427	4U 1735-444	264.739	-44.455	0.78	0.31	342.86	34.8 ± 0.2	0.015 ± 0.002	...	...	19.38	2 Y h a I b
938	2PBC J1739.1-3022	XTE J17391-3021	264.793	-30.378	4.53	2.04	5.37	1.4 ± 0.8	0.23 ± 0.08	...	...	2.60	2 N 1 a I
939	2PBC J1740.2-2840	...	265.050	-28.669	4.78	...	4.91	1.2 ± 0.7	0.26 ± 0.10	...	...	2.11	3 N 1
940	2PBC J1740.3-3654	IGR J17404-3655	265.091	-36.913	4.37	1.23	5.70	1.1 ± 0.6	0.3 ± 0.1	...	...	1.63	3 N 1 a I f
941	2PBC J1740.6-2819	SLX 1737-282	265.156	-28.330	1.76	2.02	30.69	7.7 ± 0.5	0.32 ± 0.02	...	...	2.55	1 Y 1 a I
942	2PBC J1741.3+0349	RX J1741.4+0348	265.353	3.834	4.56	1.53	5.30	1.6 ± 1.0	0.48 ± 0.10	0.0300	43.52	1.80	3 Y h a b	
943	2PBC J1741.8-1210	IGR J17418-1212	265.495	-12.178	2.68	2.21	13.38	3.6 ± 0.9	0.43 ± 0.04	0.0370	44.05	1.83	1 Y h a I	
944	2PBC J1742.0-6053	1RXS J174201.5-605514	265.513	-60.888	4.58	1.94	5.27	0.9 ± 0.5	0.3 ± 0.1	0.4100	45.81	1.49	3 N h b b	
945	2PBC J1742.2-5149	1RXS J174219.0-514604	265.567	-51.817	5.02	2.99	4.98	0.7 ± 0.4	0.3 ± 0.1	...	...	1.96	1 N h a f
946	2PBC J1742.5+1838	...	265.629	18.644	4.80	...	4.86	0.8 ± 0.5	0.20 ± 0.10	...	...	1.73	2 N h
947	2PBC J1743.0-3620	[KRL2007b] 264	265.741	-36.357	3.39	0.87	8.80	1.7 ± 0.9	0.27 ± 0.06	...	...	2.11	3 N 1 b I
948	2PBC J1743.6+6252	2MASXJ17431735+6250207	265.899	62.847	3.31	2.16	9.15	1.2 ± 0.7	0.32 ± 0.08	0.0335	43.49	1.47	1 Y h a	
949	2PBC J1744.0-2942	1E 1740.7-2942	266.034	-29.707	0.89	3.68	193.46	64.1 ± 0.4	0.440 ± 0.003	...	...	86.07	1 Y 1 a I
950	2PBC J1744.7-2850	CXOGC J174502.3-285450	266.181	-28.844	3.48	5.91	8.41	5.7 ± 0.6	0.22 ± 0.02	...	...	5.21	2 N 1 a I
951	2PBC J1744.8-3231	IGR J17448-3232	266.219	-32.517	4.56	3.44	5.30	1.2 ± 0.6	0.20 ± 0.07	...	...	1.86	3 N 1 a I f
952	2PBC J1745.7+2907	SWIFT J1745.4+2906	266.439	29.121	3.80	1.91	7.22	1.4 ± 0.8	0.39 ± 0.08	0.1105	44.64	1.39	3 N h a b	
953	2PBC J1746.1-3214	IGR J17464-3213	266.551	-32.241	1.23	0.90	70.82	18.5 ± 0.3	0.400 ± 0.008	...	...	29.11	3 Y 1 a I
954	2PBC J1745.7-2930	1A 1742-294	266.654	-29.521	1.23	6.84	71.14	15.2 ± 0.4	0.177 ± 0.006	...	...	12.21	2 Y 1 a I b ?
955	2PBC J1746.2-2853	SAX J1747.0-2853	266.705	-28.814	1.63	5.08	36.38	12.3 ± 0.4	0.207 ± 0.008	...	...	3.23	3 Y 1 a I
956	2PBC J1746.8-2845	CXOGCS J174621.05-284343	266.705	-28.755	1.68	6.36	33.98	10.1 ± 0.4	0.190 ± 0.010	...	...	1.69	2 N 1 a I F
957	2PBC J1747.2-2721	IGR J17473-2721	266.837	-27.345	0.97	0.62	141.41	43.1 ± 0.4	0.319 ± 0.003	...	...	48.84	1 Y 1 a I
958	2PBC J1747.4-3000	1RXS J174726.8-300008	266.850	-30.013	1.27	0.91	64.70	15.2 ± 0.3	0.226 ± 0.007	...	...	4.14	3 N 1 a I f
959	2PBC J1747.6-2253	2MASS J17472972-2252448	266.904	-22.884	4.55	1.70	5.32	1.5 ± 0.9	0.38 ± 0.08	...	...	1.92	1 N 1 a I f
960	2PBC J1747.6-2820	CXOGCS J174742.4-282228	266.963	-28.365	3.11	1.98	10.21	4.5 ± 0.6	0.28 ± 0.03	...	...	1.72	2 Y 1 a I ?
961	2PBC J1748.0-3608	[KRL2007b] 281	267.000	-36.142	4.63	4.07	5.17	0.8 ± 0.4	0.16 ± 0.09	...	...	3.20	2 N 1 b I
962	2PBC J1748.2+2721	...	267.073	27.362	4.67	...	5.09	0.4 ± 0.2	< 0.2	...	...	1.52	2 N h
963	2PBC J1748.1-2634	GX 3+1	267.078	-26.601	0.85	5.54	227.68	28.6 ± 0.3	0.020 ± 0.002	...	...	13.03	2 Y 1 a I b
964	2PBC J1748.6-2728	[KRL2007b] 283	267.173	-27.482	4.38	0.33	5.67	5.6 ± 0.5	0.30 ± 0.02	...	...	1.82	3 N 1 a I
965	2PBC J1748.7-3253	IGR J17488-3253	267.212	-32.918	2.98	0.92	11.05	2.9 ± 1.0	0.38 ± 0.05	0.0200	43.42	2.01	3 Y 1 a I b	
966	2PBC J1749.1-2638	GRO J1750-27	267.291	-26.637	1.14	0.77	86.15	22.7 ± 0.3	0.039 ± 0.003	...	...	30.18	3 Y 1 a I
967	2PBC J1749.4-2820	IGR J17497-2821	267.365	-28.329	1.92	2.77	25.68	8.1 ± 0.5	0.44 ± 0.02	...	...	10.72	1 Y 1 a I
968	2PBC J1750.2-3703	1H 1746-370	267.546	-37.050	1.48	0.36	44.77	4.7 ± 0.4	0.02 ± 0.01	...	...	1.95	2 Y 1 a I b
969	2PBC J1750.4-2902	AX J1750.5-2900	267.601	-29.047	2.06	0.51	22.22	5.4 ± 0.5	0.26 ± 0.02	...	...	17.57	1 N 1 a I
970	2PBC J1750.9-3116	GRS 1747-312	267.705	-31.302	2.24	0.97	18.74	3.2 ± 0.7	0.24 ± 0.03	...	...	3.54	3 Y 1 a I
971	2PBC J1753.4-0126	SWIFT J1753.5-0127	268.367	-1.446	0.71	0.35	567.72	156.9 ± 0.4	0.471 ± 0.001	...	...	140.97	1 Y h a I
972	2PBC J1754.4-2617	IGR J17544-2619	268.616	-26.296	4.30	2.18	5.84	1.3 ± 0.7	0.19 ± 0.07	...	...	2.45	1 N 1 a I b
973	2PBC J1758.5-2122	IGR J17586-2129	269.657	-21.398	2.81	0.88	12.27	2.5 ± 0.9	0.18 ± 0.03	...	...	2.75	2 Y 1 a I
974	2PBC J1759.7-2201	IGR J17597-2201	269.946	-22.008	2.58	1.24	14.35	3.3 ± 0.8	0.24 ± 0.03	...	...	2.41	1 Y 1 a I
975	2PBC J1800.0+6634	NGC 6552	269.996	66.597	3.35	1.35	8.96	1.4 ± 0.8	0.49 ± 0.10	0.0265	43.33	1.75	1 Y h a	
976	2PBC J1800.5+0810	V2301 OPH	270.153	8.183	3.34	0.80	9.05	1.3 ± 0.7	0.20 ± 0.06	...	...	2.03	3 Y h a b
977	2PBC J1801.1-2505	GX 5-1	270.284	-25.112	0.68	1.97	772.97	83.6 ± 0.2	0.0144 ± 0.0007	...	...	30.17	2 Y 1 a I b
978	2PBC J1801.2-2544	GRS 1758-258	270.297	-25.740	0.74	0.34	423.20	121.5 ± 0.4	0.468 ± 0.001	...	...	59.85	1 Y 1 a I b
979	2PBC J1801.6-2030	GX 9+1	270.413	-20.507	0.77	2.06	349.65	35.0 ± 0.2	0.004 ± 0.002	...	...	5.48	2 Y 1 a I b
980	2PBC J1802.7-1454	IGR J18027-1455	270.692	-14.911	2.65	0.39	13.72	3.3 ± 0.9	0.39 ± 0.04	0.0350	43.97	1.88	3 Y 1 a I	
981	2PBC J1802.9-2016	IGR J18027-2016	270.698	-20.251	2.71	2.59	13.15	8.2 ± 0.3	0.114 ± 0.010	...	...	2.64	1 Y 1 a I f

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	<i>SNR</i> Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (<i>R</i> ₃₀₋₁₅₀ / <i>R</i> ₁₄₋₁₅₀)	Redshift	log <i>L</i> ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
982 2PBC J1804.7-1455	IGR J18048-1455	HXB	271.176	-14.932	4.58	1.18	5.26 1.0 ± 1.5	0.12 ± 0.09	...	...	1.50	2 N l a I	
983 2PBC J1807.3-5934	...	...	271.828	-59.583	4.60	...	5.22 0.7 ± 0.4	0.14 ± 0.09	...	...	1.21	2 N h f	
984 2PBC J1807.7+1122	2MASX J18074992+1120494	G	271.942	11.375	3.97	2.01	6.70 1.6 ± 1.0	0.50 ± 0.10	...	...	1.80	1 N h a b	
985 2PBC J1807.9+0551	V* V426 Oph	DN*	271.977	5.850	2.96	1.03	11.19 1.4 ± 0.7	0.10 ± 0.05	...	...	1.83	2 Y h a b	
986 2PBC J1808.3-3656	V* V4580 Sgr	LXB	272.088	-36.938	3.72	2.75	7.47 1.6 ± 0.9	0.29 ± 0.06	...	...	4.81	3 N h a	
987 2PBC J1808.5-2025	SGR 1806-20	Psr	272.151	-20.415	2.69	0.73	13.27 4.9 ± 0.8	0.46 ± 0.03	...	...	1.86	1 Y l a I	
988 2PBC J1809.7-6555	2E 1804.8-6556	EmG	272.445	-65.932	4.66	0.87	5.12 0.8 ± 0.5	0.4 ± 0.1	0.1800	44.85	1.44	1 N h b	
989 2PBC J1810.1-4552	2MASX J18095784-4552413	BZU	272.537	-45.868	4.59	2.01	5.25 0.7 ± 0.4	0.3 ± 0.1	0.0696	43.93	1.54	3 N h a	
990 2PBC J1810.3-1906	SWIFT J181020.7-190411	X	272.593	-19.105	2.74	2.12	12.84 4.4 ± 0.5	0.38 ± 0.03	...	...	13.28	3 N l a I f	
991 2PBC J1810.6-2609	SAX J1810.8-2609	LXB	272.681	-26.160	2.02	0.65	23.13 5.3 ± 0.4	0.33 ± 0.02	...	...	11.04	3 Y l a I	
992 2PBC J1811.2-1920	<i>SNR</i> G011.2-00.3	<i>SNR</i>	272.810	-19.337	4.81	6.41	4.85 2.1 ± 1.2	0.46 ± 0.08	...	...	1.58	1 N l a I b	
993 2PBC J1812.7-0648	...	...	273.199	-6.805	4.70	...	5.03 1.3 ± 0.8	0.5 ± 0.1	...	...	1.56	1 N h	
994 2PBC J1813.6-1753	IGR J18135-1751	<i>SNR</i>	273.410	-17.867	3.12	2.94	10.16 3.4 ± 1.5	0.45 ± 0.04	...	...	1.74	1 Y l a I	
995 2PBC J1814.5-1709	GX 13+1	LXB	273.636	-17.150	0.92	0.52	173.29 21.9 ± 0.3	0.042 ± 0.003	...	...	10.21	2 Y l a I b	
996 2PBC J1815.1-1205	4U 1812-12	LXB	273.779	-12.090	0.87	0.46	212.55 54.4 ± 0.3	0.373 ± 0.002	...	...	3.06	1 Y l a I b	
997 2PBC J1815.2-1053	PBCX J181503.9-105132	X	273.813	-10.889	4.97	3.31	5.06 1.0 ± 0.6	0.2 ± 0.1	...	...	1.39	1 N l a I	
998 2PBC J1816.0-1402	GX 17+2	LXB	274.007	-14.035	0.66	0.12	880.06 101.4 ± 0.2	0.0172 ± 0.0006	...	...	16.59	2 Y l a I b	
999 2PBC J1816.0+4952	AM Her	AM*	274.031	49.863	2.19	1.00	19.57 2.0 ± 0.5	0.11 ± 0.04	...	...	3.05	2 Y h a b	
1000 2PBC J1816.2+4236	MCG+07-37-031	Sy2	274.054	42.604	4.17	3.38	6.17 0.9 ± 0.6	0.5 ± 0.1	0.0412	43.56	1.37	3 N h a	
1001 2PBC J1817.3-2507	IGR J18173-2509	CV*	274.326	-25.129	4.83	1.22	4.81 0.7 ± 0.8	< 0.1	...	...	1.59	2 N l a I f	
1002 2PBC J1817.7-3300	[KRL2007b] 312	LXB	274.449	-32.993	2.18	1.78	19.73 4.5 ± 0.5	0.32 ± 0.02	...	...	13.35	1 N h b I f	
1003 2PBC J1818.7-1701	SAX J1818.6-1703	HXB	274.689	-17.027	3.83	2.14	7.11 1.3 ± 0.7	0.16 ± 0.06	...	...	2.65	2 N l a I	
1004 2PBC J1819.3-6344	PKS J1819-6345	BZU	274.838	-63.747	5.05	1.81	4.93 0.9 ± 0.6	0.5 ± 0.2	0.0630	43.92	1.77	3 N h a	
1005 2PBC J1820.5-1433	AX J1820.5-1434	HXB	275.136	-14.554	3.77	1.39	7.33 1.9 ± 1.0	0.30 ± 0.06	...	...	2.16	3 N l a I	
1006 2PBC J1821.2+5957	...	...	275.318	59.966	4.79	...	4.89 0.8 ± 0.5	0.5 ± 0.2	...	...	1.41	1 N h	
1007 2PBC J1821.4-1318	CXOU J182119.7-131838	gam	275.354	-13.309	3.34	1.24	9.00 2.4 ± 1.2	0.34 ± 0.05	...	...	2.13	1 N l a I	
1008 2PBC J1821.5+6421	1ES 1821+643	Sy1	275.437	64.338	2.54	1.37	14.77 1.9 ± 0.5	0.31 ± 0.05	0.2970	45.77	1.60	1 Y h a I b	
1009 2PBC J1823.6-3021	H 1820-303	LXB	275.915	-30.357	0.71	0.30	543.92 65.6 ± 0.2	0.0231 ± 0.0009	...	...	18.94	2 Y h a I b	
1010 2PBC J1824.3-5622	IGR J18244-5622	Sy2	276.050	-56.364	2.05	0.43	22.47 4.1 ± 0.5	0.38 ± 0.03	0.0169	43.42	1.70	1 Y h a I	
1011 2PBC J1824.2+1846	...	...	276.065	18.775	4.68	...	5.09 1.1 ± 0.6	0.4 ± 0.1	...	...	1.53	3 N h	
1012 2PBC J1824.3-1423	XTE J1824-141	X	276.084	-14.399	3.89	1.34	6.92 1.7 ± 0.9	0.10 ± 0.06	...	...	1.71	2 N l a I	
1013 2PBC J1825.3-0001	H 1822-000	LXB	276.341	-0.025	1.70	0.77	32.81 3.2 ± 0.6	< 0.02	...	...	2.04	2 Y h a I b	
1014 2PBC J1825.7-3706	3A 1822-371	LXB	276.454	-37.106	0.80	0.42	294.72 42.9 ± 0.3	0.064 ± 0.002	...	...	2.62	2 Y h a I b	
1015 2PBC J1826.0-0708	IGR J18257-0707	X	276.513	-7.149	4.07	1.95	6.42 1.5 ± 0.9	0.37 ± 0.09	0.0370	43.66	1.83	1 N l a I	
1016 2PBC J1826.3-1450	V* V479 Sct	HXB	276.579	-14.849	4.68	0.95	5.08 2.0 ± 1.2	0.51 ± 0.09	...	...	2.09	1 N l a I b F	
1017 2PBC J1826.6+3251	...	...	276.659	32.856	4.26	...	5.95 1.2 ± 0.8	0.4 ± 0.1	...	...	1.54	1 N h	
1018 2PBC J1829.4-2347	Ginga 1826-24	LXB	277.370	-23.791	0.68	0.12	754.48 155.5 ± 0.3	0.3199 ± 0.0007	...	...	5.77	1 Y h a I b	
1019 2PBC J1829.6+4845	3C 380	BZU	277.404	48.754	3.61	0.96	7.87 1.4 ± 0.9	0.5 ± 0.1	0.6919	46.39	1.64	3 Y h a b F	
1020 2PBC J1831.0+0928	2MASX J18305065+0928414	G	277.729	9.480	3.82	1.05	7.14 1.4 ± 0.9	0.5 ± 0.1	...	...	1.29	1 Y h a	
	PBCX J183042.1+093100	X	...	...	...	3.83	...	...	...	...	...	...	...
1021 2PBC J1832.8+3124	...	...	278.220	31.408	4.94	...	5.11 0.6 ± 0.4	0.5 ± 0.2	...	...	1.43	1 N h	
1022 2PBC J1833.5-1033	<i>SNR</i> 021.5-00.9	Psr	278.382	-10.559	2.07	0.80	22.03 6.9 ± 0.4	0.35 ± 0.02	...	...	1.57	1 Y l a I F	
1023 2PBC J1833.7-2102	PKS 1830-211	BZQ	278.419	-21.065	1.91	0.29	25.74 7.5 ± 1.4	0.51 ± 0.02	2.5070	48.32	2.22	1 Y h a I F	
1024 2PBC J1835.0+3241	3C 382	Sy1	278.742	32.699	1.60	1.13	37.64 7.6 ± 0.3	0.41 ± 0.02	0.0581	44.78	1.96	1 Y h a I b	
1025 2PBC J1835.7-3259	XB 1832-330	LXB	278.930	-32.983	1.11	0.15	94.13 20.1 ± 0.3	0.373 ± 0.006	...	...	2.50	1 Y h a I F	
1026 2PBC J1836.9-5925	1H 1828-593	Sy2	279.228	-59.438	3.65	2.17	7.72 1.2 ± 0.7	0.23 ± 0.08	0.0194	43.01	1.63	2 Y h a b	
1027 2PBC J1838.0-0655	AX J1838.0-0655	<i>SNR</i>	279.490	-6.895	2.51	2.33	15.13 5.3 ± 0.9	0.44 ± 0.03	...	...	1.84	1 Y l a I	
1028 2PBC J1838.4-6525	H 1834-653	Sy2	279.595	-65.419	1.33	0.57	57.63 10.2 ± 0.4	0.35 ± 0.01	0.0132	43.60	1.71	3 Y h a I	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
1029 2PBC J1838.9-5714	PBCX J183906.3-571504	X	279.740	-57.234	3.98	1.55	6.66 1.0 ± 0.6	0.22 ± 0.09	...	...	1.76	3 N h a	
1030 2PBC J1839.9+0502	Ser X-1	LXB	279.993	5.041	0.84	0.38	244.49 20.7 ± 0.2	0.016 ± 0.003	...	...	5.39	2 Y l a I b	
1031 2PBC J1841.0-0538	IGR J18410-0535	HXB	280.228	-5.594	3.65	1.44	7.72 2.2 ± 1.2	0.38 ± 0.06	...	...	2.17	1 Y l a I	
1032 2PBC J1841.3-0456	PSR B1841-04	Psr	280.347	-4.925	2.15	1.19	20.42 8.0 ± 2.6	0.59 ± 0.03	...	...	1.74	1 Y l a I b	
1033 2PBC J1842.0+7946	3C 390.3	Sy1	280.525	79.778	1.42	0.39	49.44 9.3 ± 0.3	0.41 ± 0.01	0.0561	44.84	2.03	1 Y h a I b	
1034 2PBC J1842.3-1124	SWIFT J1842.5-1124	X	280.582	-11.412	1.93	0.60	25.32 8.1 ± 0.4	0.43 ± 0.02	...	...	20.70	1 N l a I	
1035 2PBC J1844.8-6224	ESO140-43	Sy1	281.208	-62.389	2.10	1.55	21.25 4.0 ± 0.4	0.39 ± 0.03	0.0141	43.25	1.46	1 Y h a I b	
1036 2PBC J1844.9-0433	IGR J18450-0435	HXB	281.240	-4.572	2.46	1.10	15.74 3.4 ± 0.7	0.28 ± 0.03	...	...	2.04	1 Y l a I	
1037 2PBC J1845.5+7212	2MASX J18452628+7211008	Sy2	281.352	72.189	3.25	0.32	9.45 1.2 ± 0.7	0.33 ± 0.08	0.0461	43.77	2.14	3 Y h a	
1038 2PBC J1845.6+0051	Ginga 1843+009	HXB	281.406	0.869	1.61	0.26	37.02 8.0 ± 0.4	0.29 ± 0.01	...	...	14.47	3 Y l a I	
1039 2PBC J1846.0+5607	1RXS J184557.8+561003	X	281.516	56.127	4.97	2.58	5.05 0.9 ± 0.6	0.5 ± 0.2	...	...	1.53	1 N h b b	
1040 2PBC J1846.3-0258	PSR J1846-0258	Psr	281.621	-2.967	2.54	1.22	14.77 3.9 ± 0.7	0.43 ± 0.04	...	...	1.82	1 Y l a I b	
1041 2PBC J1847.4-7831	H 1846-786	Sy1	281.975	-78.511	3.08	2.91	10.40 1.4 ± 0.7	0.35 ± 0.07	0.0743	44.29	1.96	1 Y h a b	
1042 2PBC J1848.2-0311	IGR J18483-0311	HXB	282.060	-3.171	1.74	0.66	31.44 6.8 ± 0.4	0.26 ± 0.02	...	...	7.44	1 Y l a I	
1043 2PBC J1848.3-0045	IGR J18485-0047	gam	282.103	-0.767	4.07	1.11	6.41 2.0 ± 1.1	0.41 ± 0.07	...	...	1.67	3 Y l a I	
1044 2PBC J1848.7+0039	NOVA Aql 1918	No*	282.180	0.659	4.87	5.34	5.23 0.5 ± 1.0	< 0.2	...	...	1.82	2 N l a b	
1045 2PBC J1848.8-0002	2MASS J18490182-0001190	IR	282.246	-0.023	3.43	0.67	8.63 2.7 ± 1.5	0.43 ± 0.05	...	...	1.87	1 Y l a I	
1046 2PBC J1853.0-0841	3A 1850-087	LXB	283.263	-8.711	1.29	0.54	62.05 11.8 ± 0.4	0.34 ± 0.01	...	...	3.44	3 Y l a I b	
1047 2PBC J1853.9-7850	ESO 25-2	Sy1	283.491	-78.841	4.38	4.00	5.67 1.1 ± 0.7	0.6 ± 0.1	0.0287	43.31	2.34	1 N h a b	
1048 2PBC J1854.9-3109	V* V1223 Sgr	DQ*	283.746	-31.169	1.40	0.74	50.95 9.9 ± 0.3	0.186 ± 0.009	...	...	3.44	3 Y h a I b	
1049 2PBC J1855.5-0236	XTE J1855-026	HXB	283.873	-2.604	1.13	0.44	90.01 18.5 ± 0.3	0.262 ± 0.006	...	...	4.15	3 Y l a I	
1050 2PBC J1856.0+1537	2E 1853.7+1534	Sy1	283.997	15.632	2.77	0.31	12.65 3.0 ± 0.5	0.38 ± 0.04	0.0840	44.72	1.44	1 Y h a I	
1051 2PBC J1856.6+0518	XTE J1856+053	LXB	284.178	5.318	2.46	1.18	15.70 3.5 ± 0.5	0.37 ± 0.04	...	...	5.59	1 Y l a	
1052 2PBC J1856.9-5442	1RXS J185650.3-544224	X	284.242	-54.707	5.03	1.11	4.96 1.0 ± 0.6	0.3 ± 0.1	0.0563	43.87	1.55	1 N h b b	
1053 2PBC J1857.4-7830	2E 1849.2-7832	Sy1	284.247	-78.500	2.82	1.85	12.23 2.2 ± 0.8	0.39 ± 0.05	0.0420	43.95	2.21	1 Y h a	
1054 2PBC J1858.6+0324	XTE J1858+034	HXB	284.699	3.390	3.78	3.15	7.27 0.8 ± 0.5	0.2 ± 0.1	...	...	2.04	3 Y l a I	
1055 2PBC J1900.1-2454	HETE J1900.1-2455	LXB	285.043	-24.912	0.88	0.65	204.22 45.5 ± 0.3	0.338 ± 0.003	...	...	49.73	3 Y h a I	
1056 2PBC J1901.6+0127	XTE J1901+014	XB*	285.401	1.460	2.06	1.76	22.11 5.2 ± 0.4	0.37 ± 0.02	...	...	1.79	3 Y l a I b	
1057 2PBC J1903.7+3349	2MASX J19034916+3350407	G	285.950	33.831	3.79	0.83	7.26 1.3 ± 0.8	0.42 ± 0.10	0.0150	42.83	1.79	3 N h a	
1058 2PBC J1905.3+4232	2MASX J19052592+4227398	Sy1	286.339	42.539	3.99	4.73	6.65 1.4 ± 0.8	0.38 ± 0.08	0.0275	43.37	1.90	3 N h a b	
1059 2PBC J1907.2+0918	SGR 1900+14	Psr	286.804	9.326	4.50	0.39	5.43 2.1 ± 1.3	0.52 ± 0.09	...	...	1.67	1 Y l a I	
1060 2PBC J1907.2-2048	V1082SGR	CV*	286.822	-20.815	3.58	2.16	7.99 1.4 ± 0.8	0.17 ± 0.07	...	...	1.79	3 Y h a b	
1061 2PBC J1907.9-3924	1RXS J190749.9-392341	X	286.978	-39.406	4.77	1.17	4.92 0.9 ± 0.5	0.23 ± 0.10	0.0725	44.06	1.54	3 N h b I b	
1062 2PBC J1909.6+0950	H 1907+097	HXB	287.422	9.842	1.02	1.10	120.59 17.2 ± 0.3	0.065 ± 0.005	...	...	7.80	2 Y l a I b	
1063 2PBC J1909.8+6732	...	...	287.474	67.536	4.88	...	5.21 0.7 ± 0.5	0.4 ± 0.2	...	...	1.34	1 N h	
1064 2PBC J1910.7+0735	4U 1909+07	HXB	287.691	7.593	1.02	0.55	121.33 22.8 ± 0.3	0.241 ± 0.005	...	...	4.45	2 Y l a I	
1065 2PBC J1911.2+0035	Aql X-1	LXB	287.806	0.574	1.26	0.91	66.90 14.9 ± 0.4	0.337 ± 0.008	...	...	32.35	3 Y l a I b	
1066 2PBC J1911.4+1412	...	...	287.861	14.208	4.47	...	5.48 1.4 ± 0.8	0.4 ± 0.1	...	...	1.60	1 N l	
1067 2PBC J1911.8+0459	SS 433	HXB	287.962	4.989	1.19	0.50	76.87 12.4 ± 0.3	0.212 ± 0.008	...	...	8.00	2 Y l a I b	
1068 2PBC J1914.0+0951	IGR J19140+0951	HXB	288.531	9.867	1.23	1.24	71.53 14.4 ± 0.3	0.250 ± 0.007	...	...	6.80	3 Y l a I	
1069 2PBC J1914.8+1026	...	...	288.714	10.447	4.96	...	5.07 2.7 ± 0.6	0.26 ± 0.04	...	...	1.73	1 N l	
1070 2PBC J1915.1+1056	GRS 1915+105	LXB	288.798	10.937	0.61	0.50	2067.63 387.2 ± 0.3	0.1971 ± 0.0002	...	...	263.56	3 Y l a I	
1071 2PBC J1918.7-0513	4U 1916-053	LXB	289.694	-5.227	1.14	0.64	88.03 16.1 ± 0.3	0.279 ± 0.007	...	...	2.97	1 Y h a I b	
1072 2PBC J1919.2+4411	...	...	289.822	44.197	4.64	...	5.15 0.8 ± 0.4	0.3 ± 0.1	...	...	1.77	2 N h	
1073 2PBC J1919.4-2958	1RXS J191928.5-295808	X	289.868	-29.974	4.70	0.29	5.04 0.9 ± 0.5	0.3 ± 0.1	0.1668	44.88	1.82	3 N h b I b	
1074 2PBC J1919.5+4345	...	...	289.877	43.760	4.97	...	5.05 0.7 ± 0.4	0.2 ± 0.1	...	...	1.85	3 N h	
1075 2PBC J1920.9+4358	ACO 2319	CIG	290.252	43.965	2.08	2.74	21.81 2.0 ± 0.5	< 0.03	0.0559	44.22	2.09	2 Y h a	
1076 2PBC J1921.3-5842	ESO 141-55	Sy1	290.336	-58.706	2.00	2.26	23.51 4.4 ± 0.5	0.37 ± 0.03	0.0366	44.13	1.51	1 Y h a I b	

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
1077	2PBC J1922.6-1716	SWIFT J1922.7-1716	gam	290.646	-17.272	2.20	0.86	19.50 4.7 ± 0.5	0.37 ± 0.03	...	...	4.66	1 Y h a I
1078	2PBC J1924.4+5014	CH Cyg	Sy*	291.129	50.254	2.98	0.71	11.06 1.1 ± 0.6	0.07 ± 0.06	...	...	1.59	2 Y h a b
1079	2PBC J1924.4-2913	OV -236	BZQ	291.158	-29.235	4.05	2.89	6.47 1.4 ± 0.8	0.36 ± 0.09	0.3520	45.80	2.08	1 Y h a I b F
1080	2PBC J1926.6+4131	1RXS J192630.6+413314	X	291.662	41.528	4.44	2.19	5.54 0.9 ± 0.5	0.3 ± 0.1	...	...	1.28	3 N h a
1081	2PBC J1929.9+1818	SWIFT J1929.8+1818	X	292.498	18.308	4.52	0.94	5.37 0.9 ± 0.6	0.21 ± 0.10	...	...	2.99	2 N l a I f
1082	2PBC J1933.8+3254	1RXS J193347.6+325422	Sy1	293.428	32.933	3.51	1.83	8.26 1.7 ± 0.9	0.35 ± 0.07	0.0580	44.13	1.85	2 Y h a b
1083	2PBC J1937.4-0613	IGR J19378-0617	Sy1	294.370	-6.239	3.41	1.63	8.70 2.0 ± 1.0	0.36 ± 0.06	0.0105	42.69	1.65	1 Y h a I b
1084	2PBC J1938.2-5107	1H 1927-516	Sy1	294.573	-51.121	3.77	3.23	7.32 1.2 ± 0.8	0.5 ± 0.1	0.0400	43.64	1.59	3 N h b b
1085	2PBC J1940.2-3015	2MASX J19401507-3015522	AGN	295.061	-30.257	4.26	0.45	5.94 1.5 ± 0.8	0.30 ± 0.09	0.0520	43.98	2.29	2 N h a I b
1086	2PBC J1940.2-1024	RX J1940.2-1025	AM*	295.070	-10.414	2.02	1.41	23.15 4.3 ± 0.4	0.20 ± 0.02	...	...	1.87	2 Y h a I b
1087	2PBC J1942.6-1019	NGC 6814	Sy1	295.662	-10.314	1.86	0.70	27.41 6.9 ± 0.4	0.40 ± 0.02	0.0052	42.62	2.01	1 Y h a I b
1088	2PBC J1943.9+2118	IGR J19443+2117	gam	295.971	21.301	2.75	0.81	12.81 2.2 ± 0.7	0.39 ± 0.05	...	...	2.39	3 Y l a I b
1089	2PBC J1947.2+4448	CXOU J194719.3+444942	AGN	296.811	44.825	2.82	0.85	12.22 1.7 ± 0.6	0.32 ± 0.06	0.0530	44.05	1.65	3 Y h a I
1090	2PBC J1949.5+3011	KS 1947+300	HXB	297.385	30.199	1.88	0.90	26.80 4.6 ± 0.3	0.24 ± 0.02	...	...	8.82	3 Y l a I
1091	2PBC J1952.2+0230	3C 403	Sy2	298.035	2.481	3.39	2.25	8.79 2.8 ± 1.6	0.47 ± 0.06	0.0590	44.36	2.01	1 Y h a I
1092	2PBC J1955.6+3205	3A 1954+319	LXB	298.918	32.085	1.04	0.79	113.80 22.3 ± 0.3	0.196 ± 0.004	...	...	34.48	2 Y l a I b
1093	2PBC J1958.2+3232	V* V2306 Cyg	CV*	299.538	32.514	3.67	2.17	7.68 1.2 ± 0.6	0.09 ± 0.07	...	...	1.90	2 Y l a
1094	2PBC J1958.3+3512	Cyg X-1	HXB	299.589	35.204	0.58	0.12	4199.58 1912.7 ± 0.5	0.4458 ± 0.0001	...	...	20.05	3 Y l a I b
1095	2PBC J1959.2+1143	4U 1957+115	LXB	299.828	11.702	2.96	1.33	11.17 1.8 ± 0.6	0.21 ± 0.05	...	...	2.46	1 Y h a b
1096	2PBC J1959.4+4044	Cygnus A	Sy2	299.869	40.731	1.39	0.17	52.08 10.5 ± 0.4	0.40 ± 0.01	0.0561	44.89	2.08	1 Y h a I b
1097	2PBC J1959.8+6509	1ES 1959+650	BZB	299.946	65.151	1.98	1.34	24.10 3.3 ± 0.4	0.28 ± 0.03	0.0480	44.26	2.11	3 Y h a I b F
1098	2PBC J2000.3+3211	IGR J20006+3210	HXB	300.079	32.178	2.23	0.92	18.99 4.2 ± 0.4	0.26 ± 0.02	...	...	2.50	2 Y l a I
1099	2PBC J2000.9-1812	2MASX J20005575-1810274	Sy1	300.229	-18.194	3.61	1.20	7.87 1.6 ± 0.9	0.34 ± 0.08	0.0374	43.72	1.65	3 Y h a
1100	2PBC J2003.7+7015	...	...	300.936	70.259	4.88	...	5.21 0.5 ± 0.3	0.3 ± 0.2	...	...	1.55	3 N h
1101	2PBC J2004.6-1113	...	...	301.168	-11.221	4.94	...	5.11 0.9 ± 0.5	0.3 ± 0.1	...	...	1.62	2 N h
1102	2PBC J2006.9-3433	ESO 399-20	Sy1	301.707	-34.556	3.87	1.61	6.98 1.8 ± 1.0	0.43 ± 0.08	0.0249	43.40	1.60	1 Y h a I b
1103	2PBC J2008.9-6105	NGC 6860	Sy1	302.195	-61.106	2.11	0.44	21.10 4.5 ± 0.5	0.39 ± 0.03	0.0148	43.34	1.58	3 Y h a b
1104	2PBC J2010.2-7137	...	...	302.555	-71.623	4.53	...	5.36 0.7 ± 0.4	0.2 ± 0.1	...	...	1.59	2 N h
1105	2PBC J2010.2+4759	...	...	302.569	47.996	4.68	...	5.08 1.0 ± 0.7	0.5 ± 0.1	...	...	2.02	3 N h
1106	2PBC J2010.3-2522	1RXS J201020.0-252356	X	302.594	-25.370	4.87	1.85	5.23 1.3 ± 0.8	0.5 ± 0.1	...	...	2.54	3 N h b b
1107	2PBC J2010.8-2910	...	...	302.712	-29.177	4.99	...	5.03 0.8 ± 0.6	0.5 ± 0.2	...	...	2.68	1 N h
1108	2PBC J2011.8-5650	ABELL 3667	CIG	303.036	-56.836	3.88	3.43	6.97 0.6 ± 0.3	< 0.10	0.0552	43.70	1.72	2 Y h a b
1109	2PBC J2013.0+5306	...	...	303.263	53.102	4.60	...	5.23 0.9 ± 0.6	0.5 ± 0.2	...	...	1.21	3 N h
1110	2PBC J2015.3+2303	...	...	303.841	23.061	4.93	...	5.12 0.5 ± 0.3	< 0.1	...	...	1.76	2 N h
1111	2PBC J2015.9+3712	RX J2015.6+3711	CV*	303.977	37.211	5.07	3.74	4.89 0.9 ± 0.5	0.4 ± 0.1	...	...	1.61	3 N l a
1112	2PBC J2018.1-5539	2MASX J20180125-5539312	Sy2	304.529	-55.657	2.71	0.81	13.16 2.9 ± 1.4	0.43 ± 0.05	0.0602	44.40	1.95	1 Y h a f
1113	2PBC J2018.6+4041	IGR J20187+4041	Sy2	304.666	40.695	2.65	0.72	13.69 2.8 ± 0.6	0.42 ± 0.04	0.0144	43.10	1.59	1 Y l a I
1114	2PBC J2021.7+4359	IGR J20216+4359	gam	305.430	43.992	4.24	1.54	5.99 1.1 ± 0.7	0.4 ± 0.1	0.0170	42.87	2.11	3 N l a I
1115	2PBC J2027.0-0216	6dFGS gJ202655.8-021639	Sy2	306.758	-2.273	5.07	1.53	4.90 1.0 ± 0.5	0.3 ± 0.1	0.0290	43.29	1.41	3 N h b
1116	2PBC J2028.6+2544	IGR J20286+2544	Sy2	307.142	25.727	2.00	0.47	23.46 6.1 ± 0.5	0.47 ± 0.02	0.0142	43.44	1.82	3 Y h a I f
1117	2PBC J2029.4-6146	...	...	307.373	-61.781	3.94	...	6.79 1.1 ± 0.7	0.4 ± 0.1	...	...	1.54	3 N h
1118	2PBC J2030.7-7530	...	...	307.686	-75.513	4.83	...	4.81 0.9 ± 0.5	0.3 ± 0.1	...	...	1.91	3 N h
1119	2PBC J2030.8+3834	...	...	307.705	38.575	4.95	...	5.09 0.9 ± 0.5	0.2 ± 0.1	...	...	1.58	2 N l
1120	2PBC J2032.2+3738	EXO 2030+375	HXB	308.067	37.634	0.69	0.28	642.68 104.4 ± 0.3	0.2265 ± 0.0009	...	...	142.27	2 Y l a I b
1121	2PBC J2032.4+4057	Cyg X-3	HXB	308.106	40.962	0.63	0.27	1539.12 200.9 ± 0.3	0.1816 ± 0.0004	...	...	217.94	2 Y l a I b F
1122	2PBC J2033.5+2144	4C +21.55	QSO	308.380	21.766	2.73	0.42	12.99 2.9 ± 1.2	0.45 ± 0.05	0.1735	45.37	1.54	3 Y h a
1123	2PBC J2034.3-3038	2MASX J20343135-3037289	Sy1	308.598	-30.638	4.83	1.78	4.82 1.0 ± 0.6	0.3 ± 0.1	0.0190	42.89	1.53	1 N h b b
1124	2PBC J2035.2+2604	1RXS J203505.9+260317	X	308.823	26.081	4.29	3.04	5.88 1.3 ± 0.8	0.4 ± 0.1	...	...	1.68	1 N h b b

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F								
1125	2PBC J2037.1+4149	SWIFT	J2037.2+4151	X	309.290	41.837	2.60	0.72	14.22	1.0 ± 0.5	< 0.07	...	...	1.96	2	Y	I	a	I	
1126	2PBC J2042.6+7508	4C	74.26	Sy1	310.659	75.146	1.98	0.70	24.03	4.3 ± 0.3	0.34 ± 0.02	0.1039	45.08	1.84	3	Y	h	a	I	b	
1127	2PBC J2044.0+2834	RX	J2044.0+2833	Sy1	311.014	28.585	3.88	1.96	6.96	1.4 ± 0.8	0.36 ± 0.08	0.0500	43.92	1.74	1	Y	h	a	b		
1128	2PBC J2044.1-1043	Mrk	509	Sy1	311.034	-10.733	1.65	0.66	35.29	8.5 ± 0.4	0.40 ± 0.02	0.0343	44.36	2.28	1	Y	h	a	I	b	
1129	2PBC J2045.9+8321	...	...	...	311.480	83.362	4.65	...	5.14	0.5 ± 0.3	0.4 ± 0.1	...	...	1.30	1	N	h			
1130	2PBC J2048.3+3812	...	...	...	312.085	38.213	4.82	...	4.84	0.8 ± 0.5	0.4 ± 0.1	...	...	1.54	1	N	I			
1131	2PBC J2052.0-5704	IC	5063	Sy2	313.002	-57.074	1.81	0.33	28.97	6.4 ± 0.4	0.43 ± 0.02	0.0112	43.26	2.31	1	Y	h	a			
1132	2PBC J2054.8-4706	...	...	...	313.700	-47.102	4.95	...	5.08	0.7 ± 0.4	0.3 ± 0.1	...	...	1.48	2	N	h			
1133	2PBC J2055.7-4711	PKS	2052-47	BZQ	313.927	-47.189	4.44	3.31	5.54	1.0 ± 0.7	0.5 ± 0.2	1.4910	47.05	1.54	3	N	I	a		F	
1134	2PBC J2055.7+4925	...	...	...	313.949	49.417	5.05	...	4.92	0.4 ± 0.2	< 0.2	...	...	1.52	2	N	I			f
1135	2PBC J2056.5+4938	RX	J2056.6+4940	X	314.136	49.642	4.12	2.28	6.29	0.9 ± 0.5	0.22 ± 0.08	1.67	2	N	I	a	I	b	?
1136	2PBC J2103.6+4544	SAX	J2103.5+4545	HXB	315.911	45.758	1.91	0.64	25.72	3.6 ± 0.3	0.22 ± 0.02	...	...	12.15	2	Y	I	a	I	
1137	2PBC J2105.9-0417	...	...	...	316.489	-4.293	4.90	...	5.18	0.6 ± 0.4	< 0.2	...	...	1.84	2	N	h			
1138	2PBC J2109.0-0940	RBS	1727	Sy1	317.279	-9.683	3.35	1.01	8.97	1.3 ± 0.8	0.26 ± 0.09	0.0270	43.34	1.21	3	Y	h	a	b		
1139	2PBC J2112.5-4242	...	...	...	318.135	-42.706	4.88	...	5.21	0.6 ± 0.4	0.4 ± 0.2	...	...	1.88	1	N	h			
1140	2PBC J2113.5+5423	...	...	...	318.379	54.384	5.02	...	4.97	0.7 ± 0.4	0.3 ± 0.1	...	...	1.47	2	N	I			
1141	2PBC J2113.7+8206	S5	2116+81	Sy1	318.391	82.093	2.35	1.21	17.11	2.6 ± 0.6	0.40 ± 0.04	0.0860	44.68	1.61	3	Y	h	a	I	b	
1142	2PBC J2116.2+2519	...	...	...	319.071	25.324	4.92	...	5.13	0.4 ± 0.3	0.2 ± 0.2	...	...	1.98	2	N	h			
1143	2PBC J2117.6+5137	IGR	J21178+5139	AG?	319.427	51.636	2.82	1.18	12.24	2.2 ± 1.3	0.46 ± 0.06	...	...	1.83	1	Y	I	a	I	
1144	2PBC J2119.7+3329	1RXS	J211928.4+333259	X	319.851	33.536	4.81	1.20	4.85	0.7 ± 0.4	0.4 ± 0.2	...	...	1.54	1	Y	h	a	I	b
1145	2PBC J2123.6+4217	V2069	Cyg	CV*	320.933	42.277	3.25	1.43	9.49	1.3 ± 0.7	0.16 ± 0.06	...	...	1.71	2	Y	h	a	I	b
1146	2PBC J2123.8+2502	3C	433	Sy2	320.960	25.074	3.93	1.33	6.82	1.1 ± 0.8	0.5 ± 0.1	0.1017	44.45	1.39	3	Y	h	a			
1147	2PBC J2123.9+3407	2MASX	J21240027+3409114	G	320.979	34.117	4.90	2.41	5.18	1.0 ± 0.6	0.4 ± 0.1	...	...	1.38	3	N	h	a	b	
1148	2PBC J2124.5+0503	...	...	...	321.128	5.062	4.75	...	4.96	0.6 ± 0.4	< 0.1	...	...	1.60	2	N	h			
1149	2PBC J2124.6+5058	IGR	J21247+5058	Sy1	321.161	50.970	1.15	0.38	85.77	16.1 ± 0.3	0.404 ± 0.007	0.0200	44.16	2.90	1	Y	I	a	I		
1150	2PBC J2127.7+5657	IGR	J21277+5656	Sy1	321.901	56.957	2.02	1.40	22.98	3.1 ± 0.4	0.23 ± 0.03	0.0140	43.14	1.47	3	Y	I	a	I	b	
1151	2PBC J2129.2-1537	PKS	2126-158	BZQ	322.316	-15.617	3.35	1.87	8.99	2.4 ± 1.4	0.49 ± 0.07	3.2680	48.14	1.89	1	Y	h	a	b		
1152	2PBC J2129.9+1210	4U	2129+12	LXB	322.498	12.173	1.48	0.41	45.04	7.7 ± 0.3	0.28 ± 0.01	...	...	2.27	1	Y	h	a	I	b
1153	2PBC J2131.8-3343	RBS	1756	Sy1	323.004	-33.710	2.49	0.38	15.32	3.8 ± 0.6	0.40 ± 0.04	0.0297	43.89	1.93	1	Y	h	a	b		
1154	2PBC J2133.9+5106	IGR	J21335+5105	CV*	323.436	51.109	1.71	0.88	32.45	4.8 ± 0.3	0.21 ± 0.02	...	...	1.97	2	Y	I	a	I	b
1155	2PBC J2134.8-2727	1RXS	J213445.2-272551	Sy1	323.693	-27.452	3.26	1.32	9.40	1.9 ± 1.2	0.49 ± 0.09	0.0670	44.30	1.59	3	Y	h	a	b		
1156	2PBC J2136.0+4728	RX	J2135.9+4728	Sy1	324.001	47.478	2.99	1.00	10.99	1.9 ± 0.9	0.37 ± 0.05	0.0252	43.44	1.64	3	Y	I	a	I	b	
1157	2PBC J2136.3+2003	...	...	...	324.077	20.051	4.94	...	5.11	0.8 ± 0.5	0.4 ± 0.2	...	...	1.90	3	N	h			
1158	2PBC J2136.4-6225	RBS	1763	Sy1	324.108	-62.420	2.61	1.22	14.05	2.7 ± 0.4	0.35 ± 0.04	0.0589	44.35	2.01	1	Y	h	a	b		
1159	2PBC J2137.7-1433	2MASX	J21374518-1432554	QSO	324.437	-14.557	4.98	0.48	5.04	1.2 ± 0.7	0.5 ± 0.1	0.2001	45.11	1.99	1	N	h	a	b		
1160	2PBC J2138.4+3205	2MASX	J21383340+3205060	Sy1	324.637	32.101	3.81	0.99	7.19	1.5 ± 0.9	0.44 ± 0.09	0.0250	43.33	1.45	1	Y	h	a	b		
1161	2PBC J2139.3+5659	V*	V490 Cep	HXB	324.828	56.996	4.65	1.72	5.13	0.3 ± 0.2	< 0.2	...	...	3.63	2	N	I	a		
1162	2PBC J2139.6+5955	1RXS	J213944.3+595016	X	324.897	59.865	4.01	2.00	6.59	0.8 ± 0.5	0.27 ± 0.10	...	...	1.55	2	Y	h	a	I	b
1163	2PBC J2141.1-2647	2MASS	J21411024-2645501	Sy1	325.277	-26.787	4.58	1.61	5.26	0.7 ± 0.4	0.2 ± 0.2	0.1290	44.51	1.68	3	N	h	b			
1164	2PBC J2142.7+4334	SS	Cyg	DN*	325.683	43.576	1.61	0.64	37.17	4.8 ± 0.3	0.18 ± 0.02	...	...	2.66	2	Y	h	a	I	b
1165	2PBC J2143.4-5637	1RXS	J214358.7-563733	X	325.856	-56.630	4.57	4.56	5.28	0.4 ± 0.3	< 0.2	0.0819	43.88	2.10	2	N	I	b	b		
1166	2PBC J2144.6+3819	Cyg	X-2	LXB	326.173	38.321	0.70	0.06	615.91	44.2 ± 0.2	0.020 ± 0.001	...	...	13.86	2	Y	h	a	I	
1167	2PBC J2146.4-3051	6dFGS	gJ214636.1-305141	Sy1	326.643	-30.874	4.17	0.83	6.17	0.8 ± 0.5	0.4 ± 0.2	0.0753	44.01	2.12	3	Y	h	a	b		
1168	2PBC J2146.9+2514	...	...	...	326.750	25.242	5.02	...	4.98	0.5 ± 0.3	0.3 ± 0.1	...	...	1.49	2	N	h			
1169	2PBC J2148.0+0657	4C	+06.69	BZQ	327.032	6.949	2.97	0.89	11.13	2.1 ± 1.2	0.47 ± 0.07	0.9900	46.98	1.74	1	Y	h	a	b	F	
1170	2PBC J2148.2-3455	NGC	7130	EmG	327.056	-34.985	3.61	2.32	7.90	1.5 ± 1.0	0.6 ± 0.1	0.0160	42.93	1.90	1	Y	h	a			
1171	2PBC J2150.1-1856	1RXS	J214958.2-185926	Sy1	327.542	-18.943	4.54	3.74	5.35	0.9 ± 0.5	0.3 ± 0.1	0.1580	44.79	1.90	1	N	h	b	b		
1172	2PBC J2150.7+1405	CGCG	427-028	G	327.697	14.087	4.41	1.39	5.61	1.1 ± 0.6	0.30 ± 0.10	0.0303	43.36	1.64	2	N	h	a			

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	SNR	Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (R ₃₀₋₁₅₀ /R ₁₄₋₁₅₀)	Redshift	log L ₁₄₋₁₅₀ ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
1173	2PBC J2152.0-3027	PKS 2149-306	BZQ	327.996	-30.459	1.86	0.82	27.13	7.1 ± 1.7	0.53 ± 0.03	2.3450	48.20	2.07	1 Y h a I b
1174	2PBC J2155.1+6205	...	...	328.779	62.095	4.69	...	5.06	0.6 ± 0.3	0.3 ± 0.2	...	...	1.48	1 N h
1175	2PBC J2157.3-6945	2MASX J21570595-6941236	Sy1	329.348	-69.753	4.78	4.07	4.91	0.8 ± 0.5	0.4 ± 0.1	0.0280	43.17	1.27	3 N h a b
1176	2PBC J2157.4-0611	1RXS J215727.0-061022	X	329.359	-6.188	4.75	0.95	4.96	0.7 ± 0.4	0.4 ± 0.2	...	...	1.66	3 N h b b
1177	2PBC J2200.7+1033	Mrk 520	Sy1	330.179	10.563	2.41	0.72	16.30	2.7 ± 0.5	0.38 ± 0.04	0.0272	43.66	1.72	1 Y h a I
1178	2PBC J2202.0-3152	NGC 7172	Sy2	330.508	-31.878	1.31	0.37	60.50	13.6 ± 0.4	0.44 ± 0.01	0.0086	43.35	2.64	3 Y h a I f
1179	2PBC J2202.7+4217	BL Lac	BZB	330.728	42.274	2.74	2.13	12.84	2.3 ± 0.9	0.41 ± 0.05	0.0688	44.41	1.65	3 Y h a I b F
1180	2PBC J2203.3+3148	4C 31.63	BZQ	330.798	31.794	3.53	2.15	8.21	0.8 ± 0.5	0.4 ± 0.1	0.2980	45.37	1.97	3 Y h a b
1181	2PBC J2204.4+0336	2MASX J22041914+0333511	Sy2	331.077	3.579	2.88	0.89	11.75	1.5 ± 0.8	0.32 ± 0.08	0.0611	44.12	1.67	3 Y h a
1182	2PBC J2207.0+1014	NGC 7212	Sy2	331.762	10.248	5.07	0.90	4.89	0.9 ± 0.5	0.4 ± 0.1	0.0263	43.13	1.45	3 N h a
1183	2PBC J2207.9+5430	3A 2206+543	HXB	331.993	54.513	1.03	0.42	115.51	17.5 ± 0.3	0.284 ± 0.005	...	...	12.81	3 Y l a I b
1184	2PBC J2209.1-2746	NGC 7214	Sy1	332.275	-27.782	4.41	1.72	5.62	1.2 ± 0.8	0.5 ± 0.2	0.0234	43.16	1.85	1 N h a b
1185	2PBC J2209.2-4710	NGC 7213	BZU	332.304	-47.150	2.10	1.16	21.41	4.0 ± 0.9	0.47 ± 0.04	0.0059	42.50	1.75	3 Y h a b
1186	2PBC J2211.9+1843	BZQJ2211+1841	BZQ	332.934	18.744	3.37	3.63	8.86	1.2 ± 0.7	0.5 ± 0.1	0.0699	44.16	1.55	1 N h b b
1187	2PBC J2213.9+1242	V* RU Peg	DN*	333.493	12.723	2.83	1.60	12.14	1.4 ± 0.7	0.17 ± 0.06	...	...	1.53	2 Y h a b
1188	2PBC J2214.1-2557	...	...	333.550	-25.963	4.45	...	5.53	1.2 ± 0.7	0.4 ± 0.1	...	...	1.82	3 N h
1189	2PBC J2214.7-3849	RBS 1835	Sy1	333.671	-38.819	4.39	0.79	5.65	1.0 ± 0.6	0.4 ± 0.1	0.0392	43.57	1.95	1 Y h a b
1190	2PBC J2217.1+1410	Mrk 304	Sy1	334.276	14.227	4.05	1.65	6.47	1.0 ± 0.5	0.2 ± 0.1	0.0662	44.02	1.54	2 Y h a
1191	2PBC J2217.9-0820	FO Aqr	DQ*	334.486	-8.341	1.54	0.70	40.90	4.7 ± 0.3	0.15 ± 0.02	...	...	1.74	2 Y h a I b
1192	2PBC J2218.4+1925	RX J2218.5+1925	X	334.621	19.422	4.26	0.88	5.95	0.7 ± 0.4	< 0.1	...	...	1.57	2 N h a b
1193	2PBC J2219.8+2613	BZQJ2219+2613	BZQ	334.948	26.221	3.17	0.49	9.89	1.7 ± 1.0	0.45 ± 0.07	0.0850	44.48	1.69	1 N h b b
1194	2PBC J2223.6+1152	MCG+02-57-002	Sy1	335.912	11.873	4.80	2.71	4.86	1.0 ± 0.6	0.4 ± 0.1	0.0290	43.30	1.33	1 N h a b
1195	2PBC J2223.8-0206	3C 445	Sy1	335.966	-2.100	2.17	0.59	20.01	4.1 ± 0.5	0.37 ± 0.03	0.0563	44.49	1.56	3 Y h a
1196	2PBC J2227.0+3623	MCG+06-49-019	Sy1	336.753	36.366	3.58	1.06	7.99	1.6 ± 1.0	0.50 ± 0.09	0.0211	43.20	1.72	1 Y h a b
1197	2PBC J2227.2+0736	...	...	336.815	7.608	4.88	...	5.21	0.6 ± 0.3	0.2 ± 0.2	...	...	1.59	2 N h
1198	2PBC J2227.2-7022	FRL 357	H2G	336.818	-70.379	4.89	1.36	5.19	0.7 ± 0.4	0.4 ± 0.1	0.0284	43.12	1.35	3 N h b
1199	2PBC J2229.4+6647	IGR J22292+6647	AGN	337.257	66.791	3.84	0.92	7.08	1.4 ± 0.8	0.49 ± 0.09	0.1130	44.65	1.74	1 Y h a I
1200	2PBC J2229.6-0831	PKS 2227-08	BZQ	337.408	-8.520	3.63	1.80	7.81	1.5 ± 1.0	0.6 ± 0.1	1.5615	47.14	1.64	1 Y h a f F
1201	2PBC J2232.4+1144	4C +11.69	BZQ	338.136	11.733	2.95	0.96	11.23	2.4 ± 1.5	0.52 ± 0.06	1.0370	47.00	1.42	1 Y h a b F
1202	2PBC J2234.5-3709	2MASX J22344092-3706434	Sy1	338.628	-37.163	4.81	3.67	4.85	0.7 ± 0.4	0.4 ± 0.2	0.0430	43.48	1.45	1 N h a b
1203	2PBC J2234.8-2541	ESO 533-50	Sy2	338.711	-25.729	3.46	3.14	8.50	1.6 ± 1.0	0.41 ± 0.09	0.0263	43.40	1.46	1 N h b
1204	2PBC J2235.6-2601	NGC 7314	Sy1	338.937	-26.016	2.10	2.06	21.33	4.3 ± 0.5	0.38 ± 0.03	0.0047	42.33	1.55	3 Y h a I b
1205	2PBC J2236.0+3358	NGC7319 (Stephan)	Sy2	339.008	33.992	2.45	1.08	15.90	3.3 ± 1.0	0.45 ± 0.04	0.0221	43.55	1.85	1 Y h a
1206	2PBC J2236.7-1232	Mrk 915	Sy1	339.210	-12.552	2.69	1.05	13.27	2.5 ± 1.5	0.49 ± 0.06	0.0240	43.51	1.23	1 Y h a I b
1207	2PBC J2238.9+4050	...	...	339.728	40.835	4.50	...	5.43	0.7 ± 0.4	0.4 ± 0.2	...	...	1.36	3 N h
1208	2PBC J2240.2+0802	RHS 59	Sy1	340.074	8.035	3.72	1.10	7.49	1.5 ± 0.9	0.35 ± 0.08	0.0250	43.34	1.58	3 Y h a b
1209	2PBC J2245.8+3939	3C 452	Sy2	341.473	39.683	2.35	0.89	17.13	3.6 ± 1.8	0.50 ± 0.04	0.0810	44.74	1.84	3 Y h a I
1210	2PBC J2248.8+1725	...	...	342.211	17.427	4.51	...	5.40	0.8 ± 0.5	0.4 ± 0.1	...	...	1.29	3 N h
1211	2PBC J2250.7-0853	2MASS J22505170-0854568	AGN	342.679	-8.896	4.33	2.45	5.78	1.1 ± 0.7	0.4 ± 0.1	0.0650	44.05	1.65	1 N h b
1212	2PBC J2251.8+2215	87GB 224928.1+220114	BZQ	342.928	22.278	3.22	2.68	9.65	1.6 ± 1.0	0.53 ± 0.10	3.6680	48.04	2.27	3 Y h a I
1213	2PBC J2253.9+1609	3C 454.3	BZQ	343.484	16.153	1.45	0.48	47.08	10.5 ± 0.9	0.52 ± 0.01	0.8590	47.44	4.55	1 Y h a I b F
1214	2PBC J2254.0-1734	RBS 1913	Sy1	343.517	-17.578	1.46	0.48	46.60	9.0 ± 0.4	0.39 ± 0.01	0.0639	44.94	2.90	1 Y h a I b
1215	2PBC J2254.3+1146	MCG+02-58-032	Sy2	343.593	11.775	3.39	0.78	8.78	1.8 ± 1.0	0.39 ± 0.07	0.0285	43.51	1.53	1 Y h a
1216	2PBC J2255.3-0310	AO Psc	DQ*	343.834	-3.177	1.97	0.54	24.29	2.7 ± 0.5	0.12 ± 0.03	...	...	1.50	2 Y h a I b
1217	2PBC J2258.9+4055	MCG +07 -47 -002	Sy1	344.708	40.926	3.14	1.09	10.08	2.1 ± 1.3	0.51 ± 0.07	0.0171	43.14	1.58	3 Y h a
1218	2PBC J2259.6+2454	RBS 1922	Sy1	344.916	24.926	2.60	1.65	14.18	2.2 ± 0.6	0.34 ± 0.05	0.0338	43.76	1.68	3 Y h a b
1219	2PBC J2301.5+3945	...	...	345.376	39.763	4.96	...	5.07	0.3 ± 0.2	< 0.2	...	...	1.90	2 N h
1220	2PBC J2301.6-5912	6dFGS gJ230136.3-591321	Sy1	345.402	-59.216	4.44	0.38	5.55	0.8 ± 0.5	0.3 ± 0.1	0.1500	44.70	1.78	2 N h a b

Table 2. continued.

PBC name	ID	Type ^a	RA (deg)	Dec (deg)	Error radius (arcmin)	Offset (arcmin)	<i>SNR</i> Flux ^b (erg cm ⁻² s ⁻¹)	Hardness ratio (<i>R</i> _{30–150} / <i>R</i> _{14–150})	Redshift	log <i>L</i> _{14–150} ^c (erg s ⁻¹)	Var	Flag 1 ^d A B C D	Flag 2 ^e I R F
1221	2PBC J2302.1+1558	NGC 7465	LIN	345.522	15.959	3.26	1.04	9.42 1.6 ± 1.0	0.55 ± 0.10	0.0065	42.18	1.40 3	Y h a I
1222	2PBC J2302.9-1841	PKS 2300-18	BZU	345.746	-18.686	4.89	0.84	5.19 0.8 ± 0.5	0.3 ± 0.1	0.1288	44.55	1.90 3	N h a b
1223	2PBC J2303.3+0852	NGC 7469	Sy1	345.815	8.861	1.79	0.74	29.70 6.1 ± 0.3	0.39 ± 0.02	0.0158	43.53	1.78 3	Y h a I b
1224	2PBC J2304.7-0841	Mrk 926	Sy1	346.188	-8.688	1.38	0.42	52.64 10.0 ± 0.3	0.40 ± 0.01	0.0471	44.71	2.24 1	Y h a I b
1225	2PBC J2304.8+1217	NGC 7479	Sy2	346.191	12.307	3.34	2.81	9.03 1.9 ± 1.1	0.46 ± 0.08	0.0079	42.41	1.74 3	Y h a
1226	2PBC J2305.3+0010	MCG+00-58-028	Sy2	346.329	0.183	5.07	0.38	4.89 0.8 ± 0.5	0.4 ± 0.2	0.0250	43.08	1.19 3	N h b
1227	2PBC J2307.2+0433	RBS 1944	Sy1	346.794	4.573	3.65	2.39	7.72 1.4 ± 0.8	0.42 ± 0.09	0.0420	43.77	1.54 1	Y h a b
1228	2PBC J2307.8+2244	...	...	346.951	22.737	4.49	...	5.45 1.3 ± 0.8	0.4 ± 0.1	...	...	1.63 2	N h
1229	2PBC J2307.9+4015	2MASX J23075724+4016393	G	346.992	40.266	4.04	0.72	6.51 0.9 ± 0.5	0.4 ± 0.1	...	...	1.29 1	N h a b
1230	2PBC J2318.3-4221	NGC 7582	Sy2	349.600	-42.351	1.66	1.15	34.66 6.7 ± 0.4	0.44 ± 0.02	0.0052	42.61	1.56 1	Y h a I
1231	2PBC J2318.9+0014	Mrk 530	Sy1	349.728	0.244	2.04	0.50	22.70 3.8 ± 0.4	0.35 ± 0.03	0.0292	43.88	1.55 3	Y h a I b
1232	2PBC J2319.6+2616	RX J2319.5+261	CV*	349.911	26.282	3.17	2.38	9.90 0.9 ± 0.5	0.3 ± 0.1	...	...	1.38 3	Y h a b
1233	2PBC J2322.2-0645	2MASX J23222444-0645375	G	350.566	-6.758	4.56	2.14	5.31 1.0 ± 0.7	0.5 ± 0.2	0.0329	43.39	2.33 1	N h a
1234	2PBC J2322.6+2903	...	...	350.668	29.064	4.86	...	5.25 0.9 ± 0.6	0.6 ± 0.2	...	...	1.75 1	N h
1235	2PBC J2323.3+5849	Cas A	<i>SNR</i>	350.841	58.820	1.42	0.94	49.51 6.2 ± 0.2	0.21 ± 0.01	...	...	1.33 2	Y l a I F
1236	2PBC J2325.4-3827	RBS 2004	Sy1	351.367	-38.482	3.54	2.21	8.16 1.5 ± 0.9	0.44 ± 0.09	0.0358	43.63	1.78 1	Y h a b
1237	2PBC J2325.8+2152	RHS 61	Sy1	351.463	21.895	3.22	1.00	9.61 1.4 ± 0.8	0.34 ± 0.07	0.1200	44.74	1.74 3	Y h a b
1238	2PBC J2327.3+1527	BZUJ2327+1524	BZU	351.842	15.455	4.82	2.70	4.83 1.0 ± 0.7	0.5 ± 0.2	0.0460	43.67	1.60 1	N h b
	SDSS J232709.30+153028.0	QSO					4.39			0.4600	45.77		
	BZQJ2327+1533	BZQ					6.70			0.9890	46.49		
1239	2PBC J2327.4+0939	PKS J2327+0940	BZQ	351.893	9.633	2.95	2.17	11.28 2.8 ± 1.7	0.57 ± 0.06	1.8430	47.51	1.75 3	Y h a b F
1240	2PBC J2329.0+0329	NGC 7682	Sy2	352.203	3.483	4.11	4.87	6.31 1.3 ± 0.8	0.4 ± 0.1	0.0170	42.92	1.17 1	Y h a
1241	2PBC J2331.0+7123	IGR J23308+7120	Sy2	352.697	71.381	3.99	2.68	6.64 0.8 ± 0.4	0.4 ± 0.1	0.0370	43.41	1.87 3	Y h a I
1242	2PBC J2333.9-2343	BZUJ2333-2343	BZU	353.462	-23.730	3.79	0.97	7.25 1.3 ± 0.8	0.4 ± 0.1	0.0478	43.83	1.44 3	N h b b
1243	2PBC J2337.1+2150	...	...	354.279	21.833	4.93	...	5.12 0.6 ± 0.3	0.3 ± 0.2	...	...	1.73 3	N h
1244	2PBC J2337.7+4309	1RXS J233801.0+430852	X	354.449	43.160	4.73	2.50	4.99 0.4 ± 0.3	0.3 ± 0.2	...	...	1.54 2	N h b b
1245	2PBC J2340.1+0227	...	...	355.027	2.465	4.64	...	5.15 0.6 ± 0.3	0.4 ± 0.2	...	...	1.04 1	N h
1246	2PBC J2341.0+7642	...	...	355.256	76.709	4.75	...	4.96 0.5 ± 0.3	< 0.1	...	...	1.22 2	N h
1247	2PBC J2341.9+3036	MCG+05-55-047	Sy2	355.476	30.593	2.91	0.71	11.56 2.0 ± 1.1	0.39 ± 0.06	0.0174	43.12	1.72 3	Y h a
1248	2PBC J2343.8+0539	...	...	355.974	5.656	3.90	...	6.91 1.1 ± 0.7	0.4 ± 0.1	...	...	1.44 1	N h
1249	2PBC J2344.8-4245	2MASX J23444387-4243124	Sy2	356.210	-42.756	4.53	2.50	5.36 0.9 ± 0.6	0.4 ± 0.1	0.5980	46.14	1.49 1	N h a b
1250	2PBC J2346.7-3837	6dFGS gJ234643.9-383521	G	356.694	-38.620	4.96	1.90	5.07 0.5 ± 0.3	0.4 ± 0.2	0.0500	43.49	1.62 3	N h a
	PBCX J234629.0-383405	X					4.45			...	...
1251	2PBC J2348.9+4153	...	...	357.239	41.893	5.04	...	4.95 0.4 ± 0.3	0.3 ± 0.2	...	...	1.58 2	N h
1252	2PBC J2351.8+3302	4C 32.69	QSO	357.971	33.034	4.81	6.20	4.85 1.0 ± 0.6	0.5 ± 0.2	0.6590	46.13	1.12 1	N h b
1253	2PBC J2351.7-0109	4C -01.61	Sy1	357.973	-1.166	3.30	0.96	9.23 1.5 ± 0.9	0.5 ± 0.1	0.1740	45.07	1.11 1	Y h a b
1254	2PBC J2353.7+7644	...	...	358.438	76.734	4.80	...	4.87 0.7 ± 0.5	0.4 ± 0.2	...	...	1.71 1	N h
1255	2PBC J2359.1-6055	2MASX J23590436-6054594	Sy2	359.748	-60.928	4.28	0.90	5.89 1.1 ± 0.6	0.34 ± 0.10	0.1014	44.47	1.54 3	Y h a
1256	2PBC J2359.1-3035	H 2356-309	BZB	359.780	-30.595	3.49	1.96	8.36 1.4 ± 0.8	0.41 ± 0.08	0.1671	45.04	1.49 1	Y h a b F

Notes. Sources detected for the first time as hard X-ray emitters are reported in bold face. ^(a) The source type is coded according to the nomenclature used in SIMBAD, except for the blazars included in the Roma-BZCAT (Massaro et al. 2009), for which we adopted the relevant nomenclature. ^(b) Flux is in units of 10⁻¹¹ erg cm⁻² s⁻¹. ^(c) In case of more than one counterpart, the luminosity is calculated for each counterpart (where a redshift is available) assuming that it produces all the observed flux. ^(d) Flag A: energy band with highest significance (1 = 15–150 keV; 2 = 15–30 keV; 3 = 15–70 keV). Flag B: “Y” if already reported as hard X-ray source. Flag C: “I” if the source has $|b| < 5^\circ$, “h” if the source has $|b| > 5^\circ$. Flag D: strategy used for the identification (see Sect.4). ^(e) Flag I: “I” if source seen by INTEGRAL. Flag R: “b” if correlated with a ROSAT Bright source, “f” if correlated with a ROSAT Faint source. Flag F: “F” if the counterpart is associated to a Fermi source; “?” if the BAT position is consistent with the Fermi position but the associate counterparts are different.