

Galactic X-ray Transients in the First eROSITA All Sky Survey

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ABSTRACT

Although a multitude of studies have focused on targeted observations of Galactic X-ray transients, blind surveys and population studies have been limited. We have used the *ROSAT*, eROSITA and Gaia source catalogs to find Galactic X-ray transients having timescales <30 years. We report the properties of 738 transients found in our search, majority of which are active stars or interacting binaries. We have also found ~40 compact object systems among which are at least 8 newly-identified white-dwarf systems, 3 known X-ray binaries, and one known pulsar. We use eROSITA (soft X-ray) spectra of the Galactic transients to show that two distinct types of flaring systems are prevalent: one having peak around 1 keV, well fit by thermal models, and another having peak below 0.2 keV and requiring a power-law component. Our study also reveals that single star or interacting binary systems (X-ray transients) involving giant stars exhibit significantly higher X-ray luminosities than systems involving only main-sequence stars or young stellar objects. Finally, we discuss the properties of the transients in the context of their putative emission mechanisms, the fraction of transients with respect to the total population, and the rates of Galactic transients expected in blind searches of the X-ray sky.

Key words: X-rays; binaries, stars; cataclysmic variables, stars; supergiants

1 INTRODUCTION

Galactic X-ray transients¹ span a range of classes, including chromospherically active main-sequence stars (single and binary; flaring events in F-, G-, K-type stars and M dwarfs, RS CVn, BY Dra-type and contact W UMa-type systems), flaring Young Stellar Objects (YSOs) owing to their enhanced magnetic activity, outbursts in accreting compact object systems (e.g. Thermonuclear bursts and hydrogen ionization instability related outbursts in X-ray binaries, classical and dwarf novae in cataclysmic variables) as well as wind-driven activity related to massive and evolved stars. Each of these classes of X-ray emitting stars/stellar systems have been studied in some detail through targeted observations (e.g. Carroll et al. 1980; White et al. 1980; Walter & Bowyer 1981; White & Marshall 1983; Cruddace & Dupree 1984; Drake et al. 1989; Dempsey et al. 1993; Fox et al. 1994; Warner 1995; Giampapa et al. 1996; Singh et al. 1996; Fender 2002; Güdel 2004; Remillard & McClintock 2006; Güdel & Nazé 2009; Drake 2019).

A diverse range of emission mechanisms are known to be associated with all of these Galactic X-ray transients. Ubiquitous flaring phenomena, attributed to magnetic reconnection, magnetically-accelerated plasma, and/or increased collisional excitation/de-excitation (emitting via thermal/non thermal bremsstrahlung or free bound transitions), are thought to be the cause of transient X-ray emission in YSOs and low-

mass main-sequence stars (e.g. Ozawa et al. 2005; Vievering et al. 2019; Giardino et al. 2006a,b; Zhuleku et al. 2020; Drake 2019; Güdel & Nazé 2009). Interacting binary systems (non-accreting; primarily Algol- and RS CVn-type systems), which exhibit frequent X-ray variability, have undergone speeding up of rotation due to gravitational interaction thereby resulting in enhanced chromospheric activity (e.g. Trümper & Hasinger 2008) of one or both components of the binary. High-mass single stars may also exhibit variability that may be attributed to variations in stellar wind collisions with the circumstellar media that lead to the production of varying degrees of shocks (e.g. Lucy & White 1980).

Accreting compact objects are another important class of Galactic X-ray transients. Cataclysmic variables (CVs), further classified into dwarf novae (e.g. Lasota 2001; Cannizzo 2000; Osaki 1996), classical novae (e.g. Trümper & Hasinger 2008; Starrfield 1989; Starrfield & Sparks 1987), symbiotic systems (e.g. Drake 2019; Warner 1995), and other classes, can produce transient X-ray emission owing to disk instability-induced outbursts, runaway thermonuclear fusion reactions or simply accretion state changes (e.g. Munari 2019; Lima et al. 2024; Mukai 2017). Transient X-ray emission from these systems is believed to be primarily thermal (blackbody or thermal bremsstrahlung). X-ray binary (XRB) systems in outburst are also sources of copious X-ray flares. In XRBs the flaring results from thermonuclear bursts (for neutron star systems), accretion state changes or jets (e.g. Fender 2002; Fender 2006; Tauris & van den Heuvel 2006; van der Klis 1989; Remillard & McClintock 2006; Muno et al. 2002; Done et al. 2007). Transient emission in soft X-rays is due to optically thick emission from the accretion disk surround-

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¹ In this work we refer to variables and transients collectively as "transients".

ing a compact object, while hard X-rays originate from the inverse Compton process in the corona (e.g. [Fender 2002](#)).

Several blind searches for Galactic X-ray transients, employing the XMM-Newton (e.g. [Page et al. 2012](#); [Webb et al. 2020](#); [Watson et al. 2009](#)), Chandra (e.g. [Evans et al. 2010, 2024](#)) and *ROSAT* source catalogs (e.g. [Voges 1993](#); [Boller et al. 2016](#)), have been executed previously. [Li et al. 2022](#) cross-matched the XMM-Newton slew survey and *ROSAT* catalogs to find: a) that $\sim 2.5\%$ of all the Galactic and extra-Galactic X-ray sources in the sky are variable, b) among single stars (not interacting binaries), cooler stars exhibit higher variability than hotter stars, and c) high mass X-ray binaries are significantly more variable than low mass X-ray binaries. [Yuan et al. 2006](#) undertook a two epoch variability search between *ROSAT* and XMM-Newton Serendipitous Survey catalogs, which resulted in 10 sources, including a CV, a microquasar, four flare stars, an AGN and rest unidentified sources, having XMM to *ROSAT* flux ratio greater than 10 between the two surveys. [Lin et al. 2012](#) classified unknown X-ray transients in XMM-Newton Serendipitous Source Catalog as stars, AGN and compact objects, finding that among different categories of sources, X-ray binaries exhibit large variability while flaring stars show the least variability. [Mori et al. 2021](#) used Chandra data of the Galactic center to find that 25% of the X-ray binary population shows transient behavior over a span of 16 years.

Some previous works have attempted to carve out a luminosity-timescale phase space for Galactic X-ray transients. Flaring stars (single stars and non-accreting interacting binaries) have peak X-ray luminosities of $L_X \lesssim 10^{33}$ erg s $^{-1}$, and variability timescales between $\sim$ minutes and hours; $L_X \sim 10^{29-37}$ erg s $^{-1}$ and variability timescales between days and weeks are associated with cataclysmic variables; $L_X \sim 10^{36-39}$ erg s $^{-1}$ and variability timescales between sub-second and days for X-ray binaries ($L_X \sim 10^{30-34}$ erg s $^{-1}$ in quiescence; [Remillard & McClintock 2006](#)) (e.g. [Giardino et al. 2006a](#); [Soderberg et al. 2009](#); [Mukai 2017](#); [Suleimanov et al. 2022](#); [Bahramian & Degenaar 2023](#); [Lima et al. 2024](#)).

Although targeted surveys have been able to probe low-luminosity sources, there is a modicum of sensitive blind searches to probe Galactic transients below $L_X \simeq 10^{30}$ erg s $^{-1}$. The X-ray sky survey with the extended ROentgen Survey with an Imaging Telescope Array aboard Spektrum-Roentgen-Gamma (SRG) observatory (e.g. [Predehl et al. 2021](#)) gives us an unprecedented opportunity to execute exactly such a study. eROSITA's excellent sensitivity (flux limit $\sim 5 \times 10^{-14}$ erg s $^{-1}$ cm $^{-2}$, in the 0.5–2 keV energy band for eROSITA All Sky Survey 1 (eRASS1); [Merloni et al. 2024](#)) enables the study of low-luminosity transients. The availability of X-ray spectral products facilitates spectral analysis; and blind search across a wide field (2π sr of the sky) allows the investigation of transient rates and simultaneous study of populations of transient classes. In this paper we compare eRASS1 (e.g. [Merloni et al. 2024](#)), the second *ROSAT* All-Sky Survey Point Source (2RXS) catalog (e.g. [Boller et al. 2016](#)) and the Gaia DR2 (e.g. [Gaia Collaboration et al. 2018](#)) source catalogs to study Galactic X-ray transients on timescales between a few hours and 30 years.

This paper is organized as follows. In Section 2 we describe the X-ray data, optical data, and the cross-matching of the X-ray and optical source catalogs. In Section 3 we describe the identification and classification of X-ray transient sources. In Section 4, we outline the important X-ray

luminosity and spectral properties of Galactic transients, as well as the characteristics of nine new potential CVs, three known XRBs, one known pulsar and Wolf Rayet detected in our analysis. We conclude with a summary and discussion in Section 5.

2 X-RAY DATA, OPTICAL DATA AND DATA PROCESSING

2.1 The eRASS1, 2RXS and Gaia DR2 catalogs

We used the eRASS1 catalog which contains the X-ray source positions, as well as flux and source extent information (energy range 0.2–2.3 keV) for 0.93 million sources observed during eROSITA's first all sky survey executed between December 2019 and June 2020. It spans 2π steradians ([Merloni et al. 2024](#)). In this catalog, the reported absorbed flux in the 0.2–2.3 keV band folds in a powerlaw model having photon index $\Gamma = 2$ (e.g. [Merloni et al. 2024](#)).

The 2RXS catalog ([Boller et al. 2016](#)) contains information about 0.13 Million X-ray sources detected during the all sky survey undertaken between June 1990 and August 1991 in the energy range 0.1–2.4 keV. The 2RXS catalog contains count rates and absorption-corrected flux where a different hydrogen column density and Γ have been used for each source depending on its position and nature (e.g. [Boller et al. 2016](#)). We therefore converted the *ROSAT* count rates into absorbed flux in the eROSITA energy band with photon index 2 using WebPIMMS². Accordingly, we find the *ROSAT* count rate-to-flux conversion factor (energy conversion factor, ECF) to be 9.04×10^{10} cm 2 erg $^{-1}$.³

In Figure 1, we show histograms of the 2RXS and eRASS1 fluxes, both using photon index 2, absorbed, and in the 0.2–2.3 keV energy band. We find approximate flux limits for the eRASS1 and 2RXS catalogs, i.e. close to the peaks of the flux histograms, as $F_{\text{lim,eRASS1}} = 5 \times 10^{-14}$ erg s $^{-1}$ cm $^{-2}$ and $F_{\text{lim,2RXS}} = 4 \times 10^{-13}$ erg s $^{-1}$ cm $^{-2}$ respectively.⁴

We also used the Gaia DR2 catalog to get the precise parallaxes, positions, as well as the photometric magnitudes G, BP and RP, of Galactic optical sources for 1.7 billion sources. We also used the effective temperature, stellar radius, and reddening information from Gaia DR2 wherever available (this information exists for ~ 120 million sources).

² <https://heasarc.gsfc.nasa.gov/cgi-bin/Tools/w3pimms/w3pimms.pl>

³ We followed this process in order to find the 2RXS flux in exactly the same way it has been done for eRASS1 sources (e.g. [Merloni et al. 2024](#)). In this work, we note that we have found 2 main types of transient source X-ray (eRASS1) spectra: (1) spectra peaking at around 1keV (~ 700 transients) (2) steep spectra (31 transients) (please see text for details). If we take these spectral shapes into account when calculating the fluxes (F_{spec}), then we find that the F_{spec} of sources having peaked spectra agrees with the F_{eRASS1} (calculated using $\Gamma=2$) within their respective 1σ uncertainties, while the F_{spec} of sources having steep spectra (Γ found to vary between 3 to 7) are, on an average, a factor of two larger than F_{eRASS1} .

⁴ cgs to SI units conversion: $1 \text{ erg s}^{-1} \text{ cm}^{-2} = 10^{-3} \text{ W m}^{-2}$

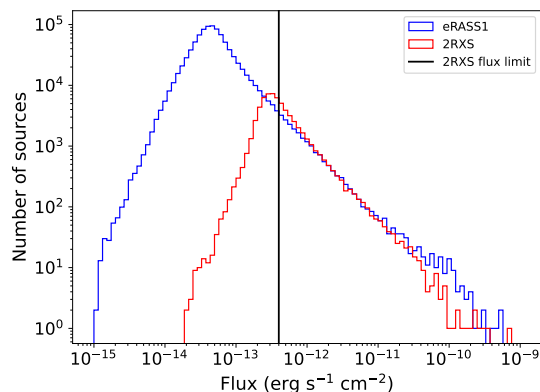


Figure 1. Histograms of the flux values (absorbed, assuming photon index 2) of 2RXS and eRASS1 catalogs. The approximate 2RXS flux threshold limit is marked with the vertical line at 4×10^{-13} erg s $^{-1}$ cm $^{-2}$.

2.2 eROSITA X-ray Spectral Products

⁵ eROSITA X-ray spectral data (response files – ARF and RMF – as well as source and background spectra) were obtained from their science data products website⁶. We used the X-ray spectral fitting tool XSPEC (version 12.13.1; [Arnaud 1996](#)) available in HEASoft (version 6.32.1) to extract the background-corrected X-ray spectra. For each source of interest, we used the part of the spectral files corresponding to the combined data from all 7 eROSITA modules in the energy range 0.2–10 keV. To increase the signal-to-noise ratio we used *grppha* to group the spectral data points to 5 counts per bin. The resulting spectra were plotted using PyXspec and will be discussed in the following sections.

2.3 Gaia multi-epoch photometric data

We used Gaia DR3 (e.g. [Gaia Collaboration et al. 2023](#)) to obtain photometric time series data in BP, RP and G bands. We used these data to find the periods associated with individual eRASS1 sources. We used *getspy* adopted by *astropy* to get power density spectrum (plot of power vs frequency) using Lomb-Scargle periodogram (LS periodogram, e.g. [Lomb \(1976\)](#); [Scargle \(1982\)](#)). LS periodogram was used to find the period associated with the unevenly sampled time series data.

2.4 eRASS1 and Gaia DR2 cross-match

We selected 20655 sources from eRASS1 which satisfy the flux condition $F_{\text{eRASS1}} > F_{\text{lim,2RXS}}$, where F_{eRASS1} represents the eRASS1 flux. Since in this work we are focusing on Galactic transients, we cross-matched the 20655 eRASS1 sources with the Gaia DR2 catalog. We further shortlisted the matched sources based on the following criteria: (i) the nearest cross-matched source is considered as the optical

counterpart, (ii) the Gaia source parallax is positive and finite, and (iii) the parallax signal-to-noise ratio is >10 .

The procedure resulted in 2916 common sources between the two catalogs. For this exercise we used a 2'' matching radius, justified as follows. In Figure 2 (dark blue dashed line) we show the fraction of matched sources between the two source lists/catalogs and matching radius. Below about 2'' we find a constant increase in the number of matched sources (as a function of matching radius), while above this radius we find a change in the rate of increase of matched sources. Given the positional uncertainties of the eRASS1 sources (2'') and Gaia sources ($\ll 1''$; [Gaia Collaboration et al. 2023](#)), we chose a matching radius⁷ of 2''. To estimate the false-positives among the matched sources we changed all eRASS1 sources co-ordinates by 1'⁸ and repeated the cross-matching exercise. The resulting curve is shown as a light blue dashed line in Figure 2. We interpret this as the false-positive detection rate for the eRASS1-Gaia DR2 match of $<15\%$ at 2'' matching radius (green solid line in Figure 2).

2.5 eRASS1 and ROSAT (2RXS) cross-match

We cross-matched 20655 sources with 2RXS⁹ with different matching radii using the CDS tool X-match¹⁰. The result of this exercise is shown with the red dotted curve in Figure 2, as the fraction of eRASS1 sources, that have a match in 2RXS, versus the matching radius. Following the same procedure as with the eRASS1 and Gaia DR2 cross-match, we changed the eRASS1 coordinates by 1' and then repeated the cross-match with 2RXS. This result is shown with the magenta dotted line in Figure 2. The *ROSAT* source population density of 2.4 sources deg $^{-2}$ and a matching radius of 40'' implies a false-positive rate of 0.1% in the list of matched sources. We also note that the median positional uncertainty in the eRASS1 source coordinates is 2'', while that for the *ROSAT* source coordinates¹¹ is 11''. Some previous works (e.g. [Li et al. 2022](#); [Yuan et al. 2006](#)) have used 1'–2' as the radius for cross-matching X-ray sources with the *ROSAT* catalog. Taken together (along with the precision in the source coordinates of the two catalogs; see Sec. 2.1), we conclude 40'' to be a reasonable matching radius between eRASS1 and 2RXS since there is no substantial incremental gain, in terms of the number of matched sources, beyond this radius and that the number of chance coincidences is $\ll 10\%$. Using the 40'' cross-matching radius we find 10671 common sources between the eRASS1 and 2RXS catalogs and 9984 sources unique to eRASS1.

For the common sources we plot the ratio of the 2RXS and eRASS1 fluxes in Figure 3. The histogram nicely follows a Gaussian distribution having a fitted mean of 1.15 ± 0.01 and standard deviation $\sigma = 1.86 \pm 0.01$. We adopted the following procedure to identify the error bars on the bins shown in the Figure 3. For every source, we used 2RXS and

⁵ In this work we have used eROSITA spectral products to analyze the properties of the transients, not to calculate fluxes and luminosities. These latter quantities are based on the published eRASS1 catalog and Gaia distances.

⁶ https://erossita.mpe.mpg.de/dr1/erodat/catalogue/search_by_id

⁷ Some previous studies like [Rodríguez \(2024\)](#) have also used 2'' as the matching radii between 4XMM-DR13 and Gaia DR3.

⁸ All eRASS1 sources have been systematically shifted in the same direction by 1'

⁹ Available on Vizier with CDS code J/A+A/588/A103/cat2rxs

¹⁰ <http://cdsxmatch.u-strasbg.fr/>

¹¹ We could not locate the median positional uncertainties for sources in the 2RXS catalog, hence we use the 1RXS catalog (e.g. [Voges et al. 1999](#)) to estimate the median positional uncertainty

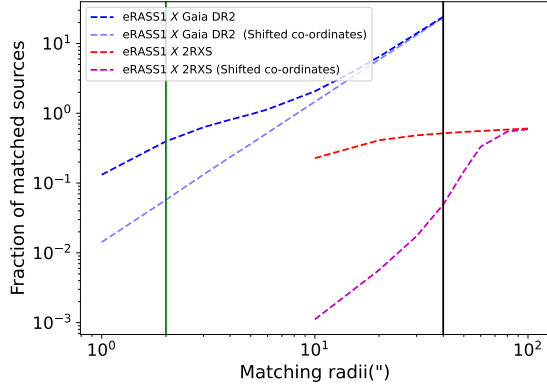


Figure 2. Plot showing the matching radius versus the fraction of matched sources (total cross-matched sources/20655) for the cross-match of eRASS1 with Gaia DR2 and 2RXS catalogs. We chose 40'' and 2'' (black and green vertical line respectively) as the matching radius for eRASS1/2RXS cross-match and eRASS1/Gaia DR2 cross-match respectively. Magenta and light blue data points correspond to the above mentioned cross-matches but with eRASS1 sources shifted by 1'.

eRASS1 flux $\pm$ uncertainty to generate 100 sets of random numbers for the flux ratio¹². For each set, a histogram was constructed using identical binning, resulting in an ensemble of 100 histograms. The spread of the counts in each bin across this ensemble was then quantified, and the standard deviation was adopted as the statistical uncertainty for that bin in the Figure 3.

We corrected 2RXS fluxes for the 15% flux offset during the variable source search described in the next section¹³.

3 GALACTIC TRANSIENT SEARCH AND SOURCE CLASSIFICATION

We cross-matched the 20655 eRASS1 sources (discussed in Sec. 2.4) with Gaia DR2 to get 2916 matched sources, which were further cross-matched with the 2RXS catalog. This resulted in 2252 sources matched between the three catalogs and 664 sources that are absent in 2RXS. We then proceeded with transient search as described below. The full procedure is also shown as a flowchart in Figure 4.

In this work we refer to variables (i.e. sources detected in both, the 2RXS and eRASS1, catalogs but with significantly

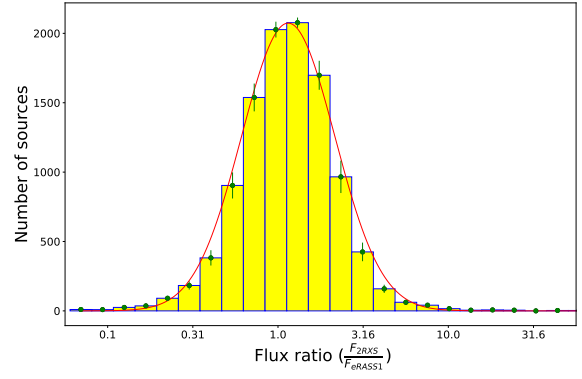


Figure 3. Histogram of the 2RXS-to-eRASS1 flux ratio for the 10671 sources resulting from the cross-match of eRASS1/2RXS using a 40'' matching radius. The error bars on each bin are described in the text. The red curve represents a Gaussian fit to the histogram and indicates a mean value (for the flux ratio) of 1.15 ± 0.01 and a corresponding standard deviation of 1.86 ± 0.01 .

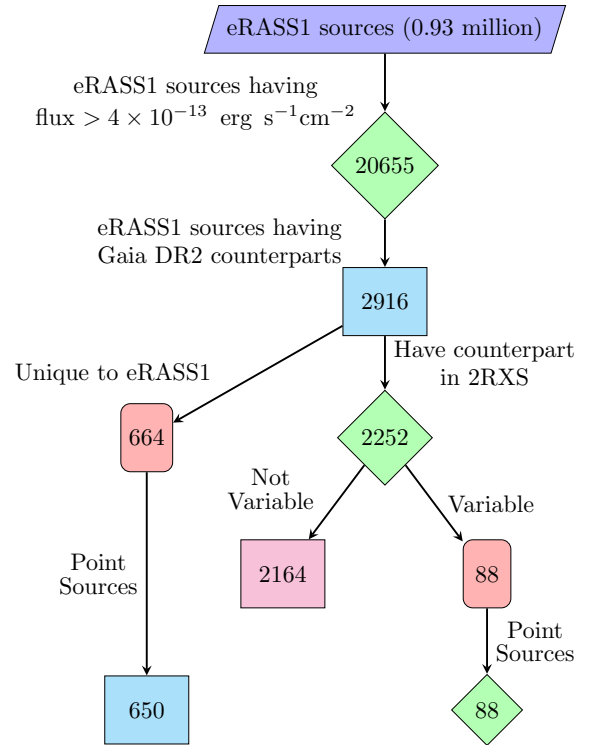


Figure 4. Flowchart showing the procedure for selecting Galactic X-ray transients in the eRASS1 catalog.

different fluxes, taking into account the flux offset as discussed in the previous section) and true transients (detected in eRASS1 but not in 2RXS) together as "transient sources".

The first part of our transient search entails the selection of sources (variables) that are detected in both eRASS1 and 2RXS catalogs, but are 2σ on either side of the mean value of the ratio of fluxes plotted in Figure 3. This gives us 88 transients. The variability significance for these sources (transients), quantified through the statistic

¹² We used `numpy.random.uniform` in python to generate the random numbers.

¹³ Flux offset corrections have been widely used in previous variability/transient searches, (e.g. Mooley et al. 2016; Thyagarajan et al. 2011). In order to investigate the source of flux offset in our work, we selected a series of samples brighter than $F_{\text{lim},2\text{RXS}}$. For these brighter samples we find that the flux ratio is centered around unity. Thus we find that for sources significantly brighter than $F_{\text{lim},2\text{RXS}}$, the flux offset goes away. This likely suggests Eddington bias as the source of the offset. If we correct for flux-dependent offsets, then the number of transients identified in our work reduces by ~ 10 . Since this is a relatively small change in the total number of transients found in this work, we have retained a single correction factor for all sources, for simplicity.

$V_S = |F_{2RXS} - F_{eRASS1}| / \sqrt{\sigma_{2RXS}^2 + \sigma_{eRASS1}^2} = \Delta F / \sigma$, was found to be ≥ 3 , indicating that all the sources are significant variables.

The second part of our transient search entails the selection of point-like sources that are unique to eRASS1 (i.e. not detected in the 2RXS catalog). This gives us 650 additional transients.

In summary, among the 2916 Galactic X-ray sources, we find 738 transient sources. The important parameters associated with these sources are given in Table 2. Their sky locations are given in Figure 5 and the luminosity-distance plot for the sources are shown in Figure 6.

3.1 Source Classification

We have classified the 738 transient into the following categories, as given in Table 2.

- (i) YSO: Young stellar object (105 Transients)
- (ii) SS/IB : Either chromospherically active single star or interacting binary (418 Transients)
- (iii) IB: Known interacting binary not having any compact object in the system (110 Transients)
- (iv) IB/ACO: Interacting binary or accreting compact object (50 Transients)
- (v) CV : Cataclysmic variable (38 Transients)
- (vi) XRB : X-ray binary (3 Transients)
- (vii) LPV : Long period variable (12 Transients)
- (viii) PSR : Pulsar (1 Transient)
- (ix) WR : Wolf Rayet (1 Transient)

We used several criteria to classify the X-ray transients, including X-ray luminosities (L_X), X-ray spectra, positions in the Hertzsprung-Russel (HR) diagram, positions relative to the "X-ray main sequence" (e.g. Rodriguez 2024) and classification in databases like *Simbad* (e.g. Wenger et al. 2000). Our classification procedure is detailed below.

(i) We queried the *Simbad* database for classifications of the X-ray transient sources using *astroquery*. *Simbad* classifications such as RS CVn, Spectroscopic Binary, Eclipsing Binary, Double or Multiple Star were labeled as "IB" in our analysis. Classifications like Young Stellar Object (108 sources) and T Tauri Star (16 sources) were labeled as "YSO". Transients classified as Cataclysmic Binary/Hot Subdwarf Candidate (29 sources) and X-ray Binary (3 sources) were labeled as "CV" and "XRB" respectively. Additionally, transients classified as Long Period Variable (18 sources), Pulsar (1 source) and Wolf Rayet (1 source) were labeled as "LPV", "PSR" and "WR" respectively. Remaining classified transients were labeled as "SS/IB", we did not label any transient as "SS" (Single star) because its binarity information may be incomplete within *Simbad*. About ~100 transients did not have any *Simbad* classification.

(ii) Transients whose Gaia counterparts lie below the main sequence on the HR diagram (Figure 7) were labeled as "CV" in our analysis, as this region of the HR diagram is occupied by systems containing white dwarfs. To further verify the "CV" classification, we investigated the locations of the transients on the "X-ray main sequence" diagram shown in Figure 8 (e.g. Rodriguez 2024), and in accordance with Rodriguez we find that all of them lie in the region expected for accreting white dwarf systems. Out of 38 transients classified as "CV" in our analysis, 29 had existing *Simbad* classification, 3 were classified as "Star" and 1 was classified as "White

Dwarf" in *Simbad*, while 5 transients didn't have any classification in *Simbad*.

We also found 17 transients, classified as Young Stellar Object or T Tauri Star on *Simbad*, to be lying along the main sequence branch in extinction-corrected HR diagram (Figure 7). We have reclassified these transients and labeled them as "SS/IB".

(iii) Classification on the basis of Period information: For the ~70% of the transients that have photometric data in Gaia DR3, we inspected their phase folded lightcurves and power density spectra using the LS periodogram technique. Out of these, 130 transients give reasonable phase folded lightcurves, based on our visual inspections. We report the Periods (P), associated with the Gaia lightcurves, for these transients in Table 2. In order to understand the periodicity associated with different kinds of binary systems and to facilitate source classification based on the periods, we compiled the periods associated with the different classes of X-ray sources. We show in Figure 9, periods associated with some accreting compact object systems like CVs¹⁴, Low mass X-ray binary systems (LMXBs)¹⁵, High Mass X-ray binary systems (HMXBs)¹⁶, as well as with some non-accreting systems like RS CVn-type systems¹⁷ and Algol-type systems¹⁸. For the newly identified accreting compact object candidates (discussed in Section 4.2), we show the phase-folded light curves in the appendix.

(a) We labeled transients as "IB/ACO" (total 50 transients, 3 of which did not have any *Simbad* classification) if their periods (found from optical data) were between a few minutes and ~8 hours, since such (orbital) periods correspond to accreting compact objects or close interacting binaries (Figure 9; see also Inight et al. 2023).

(b) 41 transients have luminosity class III (taken from *Simbad* or derived using the temperature-radius information in Gaia DR2 along with e.g. Appendix G of Carroll & Ostlie (1996)), having mean $L_X \sim 4 \times 10^{31}$ erg s⁻¹. Out of these 41 transients, one transient is labeled as "LPV" (because of existing *Simbad* class and large orbital period), two are labeled as "CV" (on the basis of their position in HR diagram, large L_X and short periods) and 38 transients have been labeled as "IB" (see also Section 5).

(c) The remaining 39 transients (out of which, 4 did not have any *Simbad* classification) were labeled as "YSO", "SS/IB", "IB" and "CV" on the basis of their position in HR diagram, Period, L_X and *Simbad* Class.

(iv) Finally, we revisited all source classifications from *Simbad* to ensure that they conform with the above criteria. In summary we reclassified ~50 transients that we believe were misclassified or insufficiently classified on *Simbad*, and newly classified the ~100 transients that had no class in *Simbad*.

¹⁴ Vizier Table: J/other/NewA/34.234/catalog and J/MNRAS/525/3597/table1 (e.g. Özdönmez et al. 2015; Inight et al. 2023)

¹⁵ Vizier Table: J/A+A/684/A124/lmxbcat (e.g. Fortin et al. 2024)

¹⁶ Vizier Table: J/A+A/671/A149/tablea (e.g. Fortin et al. 2023)

¹⁷ Vizier Table: J/ApJS/249/18/table2 (e.g. Chen et al. 2020)

¹⁸ Vizier Table: J/ApJS/238/4/binaries (e.g. Papageorgiou et al. 2018)

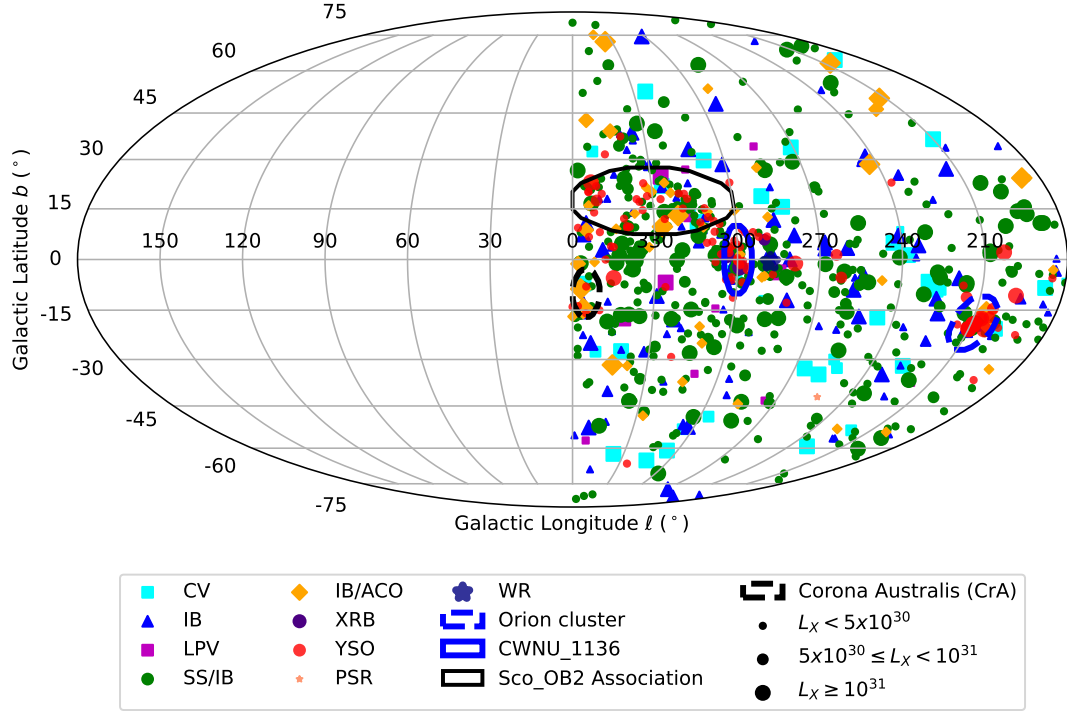


Figure 5. Locations of Galactic transients in Galactic co-ordinates, highlighting the open clusters and molecular clouds to which YSOs belong. Various classes of Galactic transients mentioned in section 3.1 are color coded and the varying marker correspond to the different X-ray luminosities (in erg s^{-1}) of the transients, as shown in the legend.

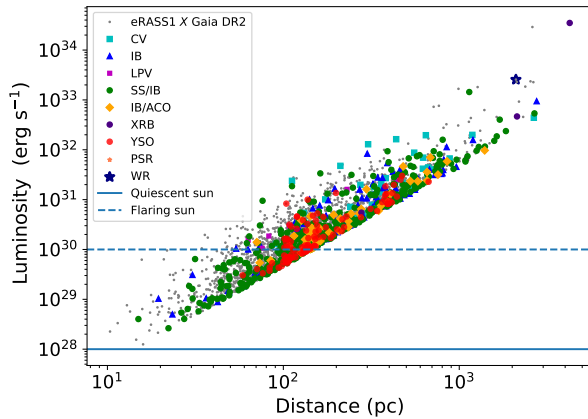


Figure 6. Luminosity (in the 0.2–2.3 keV energy band) vs distance plot for Galactic transients in eRASS1, plotted on the log-log scale. Grey data points correspond to eRASS1/Gaia DR2 cross-match. Various classes of Galactic transients mentioned in section 3.1 are color coded and the L_X of quiescence Sun is from Judge et al. 2003.

4 PROPERTIES OF THE ERASS1 GALACTIC TRANSIENTS

4.1 X-ray luminosity and spectral properties of different transient classes

Transients that are in "SS/IB", "YSO", "LPV", "IB", "IB/ACO" categories show two distinct kinds of X-ray spectra as shown in Figure 11. Transients in the upper panel exhibit similar spectra, having a shallow rising part between 0.2–0.8 keV, peaks between ~ 0.8 –1 keV, and fairly steep decline in count rate beyond 1 keV. The majority of the tran-

Table 1. X-ray luminosity ranges and peak luminosities for various transient source classes. These values are derived from the luminosity histograms shown in Figure 10.

Source Class	Luminosity Range (erg s^{-1})	Peak Luminosity (erg s^{-1})
CV	$1 \times 10^{30} - 5 \times 10^{32}$	$\sim 2 \times 10^{31}$
IB	$5 \times 10^{28} - 1 \times 10^{33}$	$\sim 1 \times 10^{31}$
IB/ACO	$5 \times 10^{29} - 2 \times 10^{32}$	$\sim 2 \times 10^{30}$
LPV	$1 \times 10^{30} - 1 \times 10^{32}$	$\sim 2 \times 10^{30}$
PSR	—	$= 1.8 \times 10^{30}$
SS/IB	$2 \times 10^{28} - 1 \times 10^{33}$	$\sim 2 \times 10^{30}$
WR	—	$= 2.5 \times 10^{33}$
XRB	$5 \times 10^{30} - 5 \times 10^{34}$	—
YSO	$3 \times 10^{29} - 4 \times 10^{31}$	$\sim 1 \times 10^{30}$

sients have spectra that are seen to terminate at ~ 3 –4 keV. In contrast, the transients in the lower panel show much softer spectra, peaking below 0.2 keV. Their spectra are steeply declining monotonically, and the majority of the transients spectra are seen to terminate around 2 keV. Interestingly, all of these monotonically declining spectra are associated with giant stars.

We fit most of the spectra using unabsorbed blackbody (*bbody*), absorbed thermal bremsstrahlung (*tbabs*brems*) and/or absorbed APEC (*tbabs*apec*; abundance fixed to solar abundance) using *PyXspec*. The model *tbabs* takes into account the Galactic absorption (e.g. Wilms et al. 2000), while the APEC model accounts for collisionally-ionized optically thin plasma emission (e.g. Smith et al. 2001). Spectra of the transients in the upper panel of Figure 11 give a best fit with a blackbody model of temperature 0.24 keV (mean reduced $\chi^2 \sim 1.05$), while significantly increased values of reduced χ^2 (~ 1.6) were obtained for the best fit APEC and

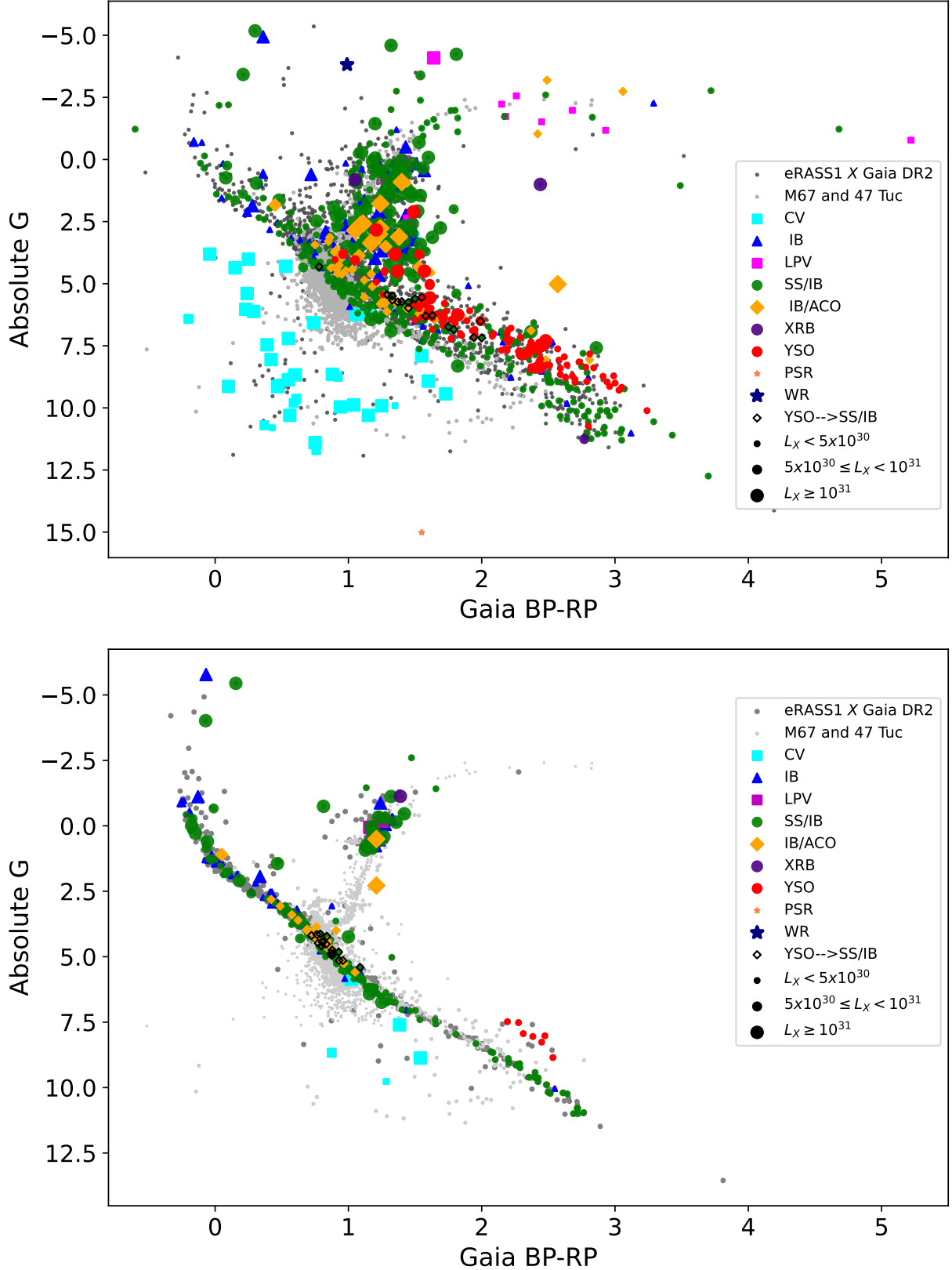


Figure 7. The HR diagrams for the Gaia counterparts of the Galactic X-ray transients in eRASS1. Light grey points in the background correspond to the M67 and 47Tuc stellar clusters respectively. Dark grey data points correspond to eRASS1 sources having a Gaia DR2 counterpart. Various classes of Galactic transients mentioned in section 3.1 are color coded. *Upper Panel:* Not corrected for reddening (Total 722 transients). *Lower Panel:* Corrected for reddening. Only those transients having extinction information have been plotted in the lower panel (303 transients). Varying marker correspond to the different X-ray luminosities (in erg s^{-1}) of the transients, as shown in the legend. Transients shown with empty black diamond are classified as Young Stellar Object or T Tauri Star in *Simbad*, but they all lie along the main sequence branch in the lower panel. Consequently, we reclassified them into “SS/IB” category.

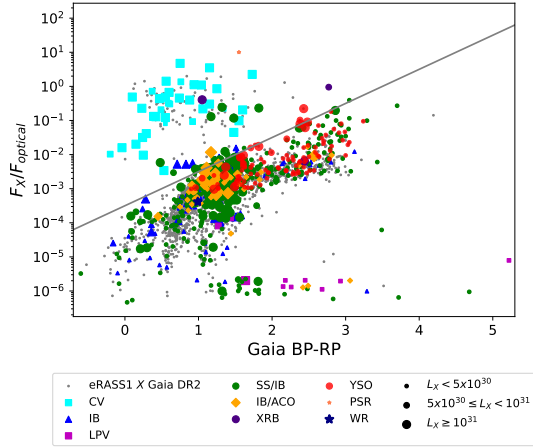


Figure 8. The "X-ray main sequence" plot (c.f. [Rodríguez 2024](#)) for the Galactic transients in eRASS1. It separates accreting compact objects in upper left corner, from stars and symbiotic systems using an empirical cut, as shown with the grey straight line. Y axis shows the ratio of X-ray to optical flux (optical flux calculated from Gaia's green filter magnitude) while the X-axis shows Gaia color. Varying marker correspond to the different X-ray luminosities (in erg s^{-1}) of the transients, as shown in the legend.

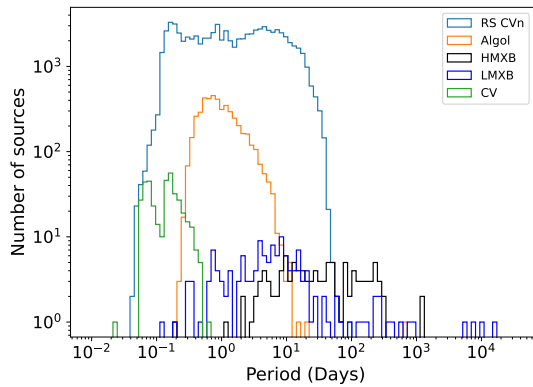


Figure 9. Compilation of the periods associated with the different classes of X-ray sources, executed to facilitate X-ray transient source classifications based on the periods. Here we show the histogram of orbital or rotation periods associated with CV (e.g. [Özdönmez et al. 2015](#); [Inight et al. 2023](#)), High Mass X-ray binary (HMXB) (e.g. [Fortin et al. 2023](#)), Low Mass X-ray binary (LMXB) (e.g. [Fortin et al. 2024](#)), RS CVn (e.g. [Chen et al. 2020](#)) and Algol systems (e.g. [Papageorgiou et al. 2018](#)). The periods mentioned refer to orbital periods for CV, HMXB, and LMXB.

bremsstrahlung models where the mean temperature is 0.8 keV. Transients in the lower panel of Figure 11 show good spectral fit only with a powerlaw model, having mean powerlaw photon index $\Gamma \sim 6.6$.

The X-ray spectra of "WR" and "PSR" transients are shown in Figure 12. The pulsar has a flat spectrum between 0.2–1 keV, and beyond this range it shows a steep decline in counts up to 2 keV. We find the best fit model to be blackbody with a temperature of 0.18 keV. The spectrum of the Wolf Rayet shows steep rise between 0.5–1 keV, followed by sharp decline in counts. The WR spectrum shows best fit with the APEC model (temperature = 0.75 keV).

Figure 13 shows the eROSITA spectra of CVs, divided into two panels to portray the different spectral shapes. CVs

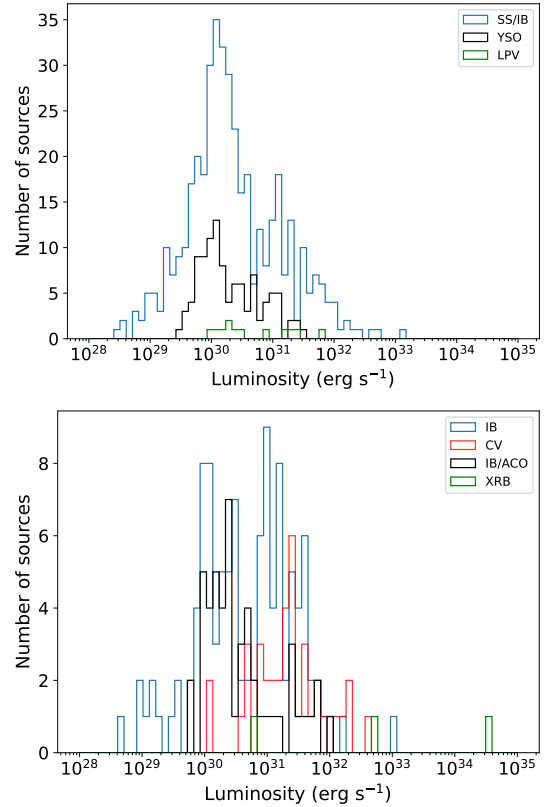


Figure 10. Luminosities of the different classes of X-ray transients found in this work.

showing spectra peaking at ~ 1 –1.5 keV are shown in the top panel while the bottom panel shows spectra peaking at energies ≤ 0.2 keV and monotonically declining in the 0.2 to 5–7 keV range. The previously unclassified/incompletely classified transients from *Simbad* (now newly classified as CVs in our work) are shown with bold asterisk markers. The X-ray spectra of most of the transients in the upper panel of Figure 13 show best fit with the APEC model having the mean temperature of 0.8 keV. Transients in the lower panel of Figure 13 show good fits with powerlaw model, having mean $\Gamma \sim 3.1$ and with absorbed APEC+powerlaw model having mean $\Gamma \sim 1.6$ and mean temperature ~ 0.25 KeV.

The eROSITA spectra of the three XRBs, detected as transients in our search, are shown in Figure 14. Two of these transients show good fits with both APEC and bremsstrahlung models, but APEC models with temperatures between 0.8–6.0 keV give reduced χ^2 values closer to unity and more precise best-fit parameters. 1eRASS J111821.2-543729 shows best fit with absorbed multi temperature blackbody (tbabs*diskbb) model.

4.2 Notes on selected compact object systems/candidates and Wolf-Rayet system

Here we describe the properties of newly-identified cataclysmic variables systems/candidates, i.e. X-ray transients whose CV classification is missing or incomplete in the *Simbad* and *Vizier* databases, together with the properties of X-ray binaries, Wolf-Rayet and pulsar, that were found to be transients.

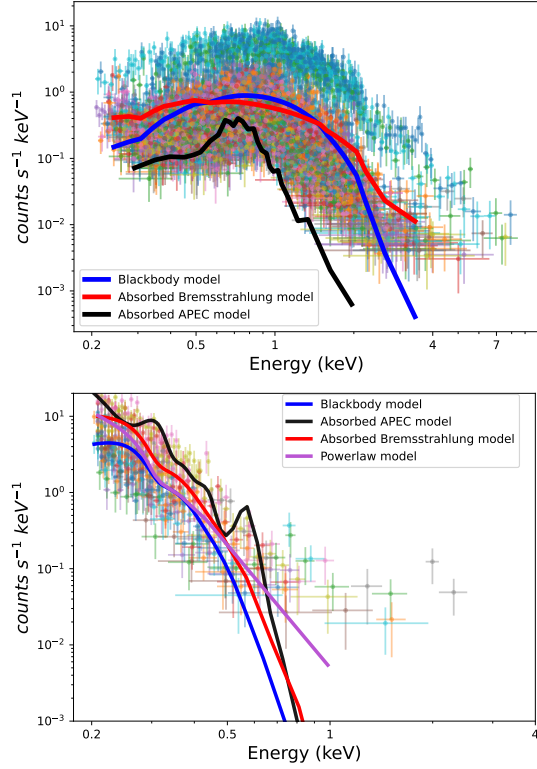


Figure 11. The two distinct types of eROSITA X-ray spectra (spectra peaked around 0.8 keV in the top panel and monotonically falling spectra shown in the lower panel) found in transients in the "SS/IB", "YSO", "LPV", "IB" and "IB/ACO" categories. Spectral fits using blackbody, thermal bremsstrahlung and APEC models (thick lines, color coded) are overplotted. All the transients in the lower panel are known giant stars. See text for details.

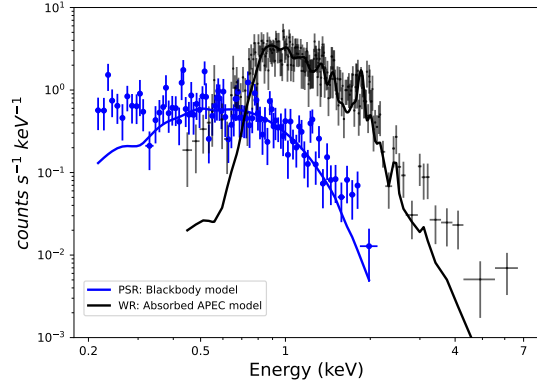


Figure 12. Spectra of transients classified as Wolf Rayet and pulsar. The best-fit models shown as thick curves and marked in the legend.

4.2.1 1eRASS J051300.0-252323

This transient is not detected in the 2RXS catalog and has a flux of $1.50 \times 10^{-12} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1, implying an increase in flux by a factor of $\gg 4.3$ between the two surveys. Its eROSITA spectrum (lower panel of Figure 13) shows some emission-like features, at $\sim 0.6 \text{ keV}$, 1 keV and 1.6 keV energies, superposed on a monotonic continuum between $0.2\text{--}2.4 \text{ keV}$ decreasing with energy. Its Gaia counterpart is located below the main sequence on the HR diagram (Figure 7) and lies at a distance of 623 pc. We thus find its X-ray luminosity

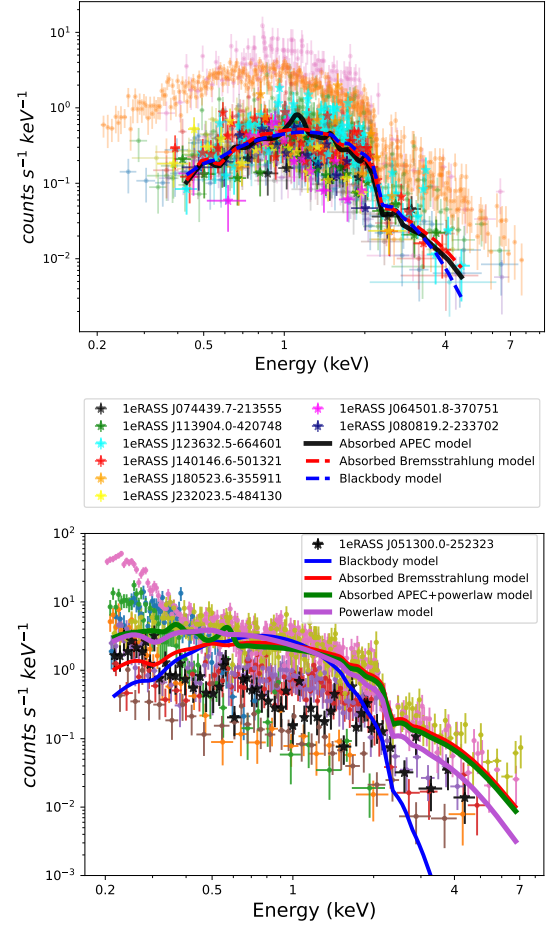


Figure 13. Spectra of all the known and newly identified Cataclysmic Variable systems in our sample. The newly identified CVs/candidates are shown with star-shaped markers. *Upper panel:* All CVs showing peaked spectra in the eROSITA band (29 sources), *Lower panels:* CVs having monotonic spectra with spectral features (9 sources) (Their individual unfolded spectra are also shown in the appendix). Spectral fits using blackbody, thermal bremsstrahlung and APEC models (thick lines) are overplotted.

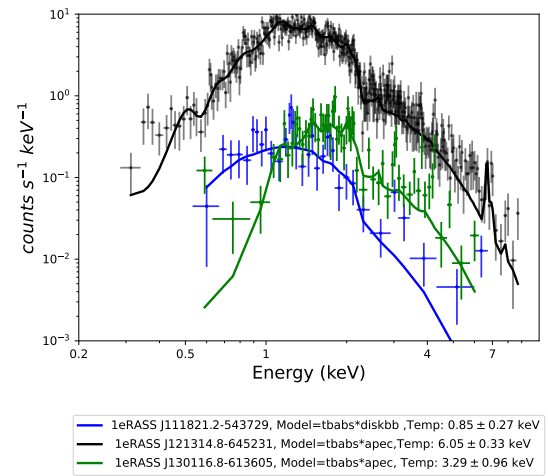


Figure 14. Spectra of X-ray Binaries in our sample of transients, which show extended emission and undulations down to 7–8 keV. Best fit models and associated temperature values are shown in legend.

to be $L_X = 6.95 \times 10^{31} \text{ erg s}^{-1}$. No temperature and radius information is available for this transient in Gaia DR2, neither there is any useful optical timeseries data to facilitate a measurement of the orbital period. Nevertheless, we classify this transients as a "CV" based on its position in the HR diagram, relatively large L_X and the X-ray spectrum which conforms with the CV class (see also previous subsection).

4.2.2 *1eRASS J074439.7-213555*

This transient is not detected in the 2RXS catalog and has a flux of $5.2 \times 10^{-13} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1, implying an increase in flux by a factor of $\gg 1.5$ between the two surveys. Its eROSITA spectrum is noisy; it appears to be almost flat between 0.6–2 keV followed by a decline and termination of counts at 3 keV (upper panel of Figure 13). Its Gaia counterpart is a K III-type giant and is located at a distance of 2653 pc, which implies $L_X = 4.39 \times 10^{32} \text{ erg s}^{-1}$. We find a period of 51 min from the Gaia RP and G band photometric light curves, but we are unable to establish how robust this period is, given the shape and low amplitude of implied variations in the phase-folded light curve (see Figure in the appendix). If this period is robust then it likely does not correspond to the orbital period as the typical orbital periods of binary systems involving giant stars is of the order of few days (e.g. Beck et al. 2022; Fortin et al. 2023), but could indicate the spin period of a compact object. The relatively high L_X together with the X-ray spectral shape (including the spectral cutoff around 3 keV) are consistent with the observed properties of accreting white dwarf systems. However, such a white-dwarf-KIII giant binary system is difficult to conceive in terms of a stellar evolution scenario. If our derived period is not robust, then an interacting binary classification is most appropriate for this X-ray transient.

4.2.3 *1eRASS J113904.0-420748*

This transient is not detected in the 2RXS catalog and has a flux of $6.87 \times 10^{-13} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1, implying an increase in flux by a factor of $\gg 2$ between the two surveys. It is located at a distance of 702 pc, implying $L_X = 4.05 \times 10^{31} \text{ erg s}^{-1}$. Its eROSITA spectrum shows a sharp peak around 1 keV (upper panel of Figure 13). It is classified as "Star" in *Simbad*. Its spectral luminosity class is G V, and the period information cannot be ascertained from Gaia DR3. We classify this transient as "CV" because of its position in HR diagram and relatively large L_X .

4.2.4 *1eRASS J123632.5-664601*

This transient is not detected in the 2RXS catalog and has a flux of $1.45 \times 10^{-12} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1, implying an increase in flux by a factor of $\gg 4.2$ between the two surveys. Its eROSITA spectrum is peaked around 1 keV with possible spectral features between 0.8–2 keV (upper panel of Figure 13). Its Gaia optical counterpart is below the main sequence in the HR diagram and lies at the distance of 360 pc. We thus find its $L_X = 2.24 \times 10^{31} \text{ erg s}^{-1}$. It is classified as "Star" in *Simbad*. No temperature or radius data is available for the transient in Gaia DR2, and period information is also missing in Gaia DR3. Nevertheless, we classify this transient as a "CV" based on its position in the HR diagram and the X-ray spectrum that conforms with the CV class.

4.2.5 *1eRASS J140146.6-501321*

This transient is not detected in the 2RXS catalog and has a flux of $1.19 \times 10^{-12} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1, implying an increase in flux by a factor of $\gg 3.4$ between the two surveys. It is located at a distance of 1187 pc, and thus $L_X = 1.99 \times 10^{32} \text{ erg s}^{-1}$. The eROSITA spectrum of this transient shows a broad peak between 0.5–2 keV (upper panel of Figure 13). Its Gaia optical counterpart is located at the position of typical K-type main sequence stars in the HR diagram, indicating spectral-luminosity class K V. We find a period of 111 min using the Gaia DR3's G filter photometric data which we consider as orbital period of the system. We classify this transient as a "CV" because of its relatively large L_X , as compared to typical K-type main sequence stars, and relatively short period (Typical orbital periods of CVs are shown in Figure 9).

4.2.6 *1eRASS J180523.6-355911*

This transient is not detected in the 2RXS catalog and has a flux of $1.26 \times 10^{-12} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1, implying an increase in flux by a factor of $\gg 3.6$ between the two surveys. It is located at a distance of 442 pc, implying $L_X = 2.94 \times 10^{31} \text{ erg s}^{-1}$. The eROSITA spectrum is noisy with potentially a peak around 1.5 keV (upper panel of Figure 13). Its Gaia optical counterpart is below the main sequence in the HR diagram, has temperature of 6858 K. Optical light curve data are sparse so the value of period cannot be ascertained. We classify the transient as "CV" because of its position in HR diagram and relatively large L_X .

4.2.7 *1eRASS J232023.5-484130*

This transient is not detected in the 2RXS catalog and has a flux of $7.93 \times 10^{-13} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1, implying an increase in flux by a factor of $\gg 2.3$ between the two surveys. It is located at a distance of 475 pc, implying $L_X = 2.14 \times 10^{31} \text{ erg s}^{-1}$. The transient has a flat spectrum between 0.4–1 keV followed by a decline and counts terminating at 2.5 keV (upper panel of Figure 13). Its Gaia optical counterpart is below the main sequence in the HR diagram. There is no temperature and radius information available in Gaia DR2, and the period information cannot be ascertained from Gaia DR3. We classify this transient as "CV" because of its position in HR diagram and relatively large L_X .

4.2.8 *1eRASS J064501.8-370751*

This transient is detected in the 2RXS catalog as 2RXS J064502.3-370753 and has a flux of $5.82 \times 10^{-13} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1; the increase in flux is by a factor of 4.5 between the two surveys. It is located at a distance of 523 pc, implying $L_X = 1.90 \times 10^{31} \text{ erg s}^{-1}$. Its eROSITA spectrum shows a sharp peak around 0.8 keV (upper panel of Figure 13). Its Gaia optical counterpart is below the main sequence in the HR diagram. While earlier this source did not have any known classification on *Simbad*, at the time of writing of this paper, the *Simbad* classification is "white dwarf" (e.g. Vincent et al. 2024). No temperature and radius information of the source is available in Gaia DR2. We obtain a period of 50 min from Gaia DR3's G filter photometric timeseries data, which is consistent with the orbital periods of CVs (Figure 9).

– specifically the AM CVn-type (having orbital period in the range of 5 to 65 minutes; Ramsay et al. 2018). Based on these information, we classify this transient as a "CV" of AM CVn type.

4.2.9 1eRASS J080819.2-233702

This transient is detected in the 2RXS catalog as 2RXS J080820.0-233652 and has a flux of $8.3 \times 10^{-13} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1; the increase in flux is by a factor of 3.6 between the two surveys. It is located at a distance of 666 pc, implying $L_X = 4.4 \times 10^{31} \text{ erg s}^{-1}$. Its eROSITA spectrum shows a sharp peak around 1 keV (upper panel of Figure 13). Its Gaia optical counterpart lies below the main sequence in the HR diagram. It is classified as "Star" in *Simbad*. Its spectral luminosity class is K III, and the period information cannot be ascertained from Gaia DR3. We classify this transient as "CV" based on its position in the HR diagram and the relatively large L_X .

4.2.10 1eRASS J104410.2-594310: Wolf-Rayet star WR 25

This is a well-studied system in literature consisting of an O-type star and a Wolf Rayet star (WN6h+O4f) (e.g. van der Hucht 2001). The X-ray transient is not detected in the 2RXS and has a flux of $4.88 \times 10^{-12} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1; the increase in flux is therefore a factor of $\gg 14$ between the two surveys. It is located at a distance of 2099 pc, implying $L_X = 2.56 \times 10^{33} \text{ erg s}^{-1}$. We were not able to ascertain the period associated with this system from the Gaia DR3 timeseries data.

The eROSITA spectrum shows a broad peak around 1 keV and it is best fit with an APEC model having plasma temperature of 0.75 keV, which appears to be consistent with a scenario where time-varying shocks are generated in colliding winds (e.g. Pollock 1987).

4.2.11 1eRASS J043715.9-471509: PSR J0437-4715

PSR J0437-4715 / 4FGL J0437.2-4715 is a well known millisecond accreting pulsar also detected in gamma-rays. The X-ray transient is not detected in the 2RXS and has a flux of $1.06 \times 10^{-12} \text{ erg s}^{-1} \text{ cm}^{-2}$ in eRASS1; the increase in flux is therefore by a factor of $\gg 3$ between the two surveys. It is located at a distance of 120 pc, implying $L_X = 1.82 \times 10^{30} \text{ erg s}^{-1}$. We were unable to ascertain the period associated with this system from the Gaia DR3 timeseries data. Its eROSITA X-ray spectrum shows a good fit with a blackbody model with a temperature of 0.18 keV. The thermal origin of the X-ray transient emission may be associated with the neutron star surface and/or from an accretion disk.

4.2.12 X-ray binaries: 1eRASS J111821.2-543729, 1eRASS J121314.8-645231, 1eRASS J130116.8-613605

These 3 X-ray transients are not detected in 2RXS, and indicate a flux change by factors between (at least) 2 – 50 across the two surveys. They have $5 \times 10^{30} \lesssim L_X \lesssim 5 \times 10^{34}$. We were unable to ascertain the periods associated with these systems from the Gaia DR3 timeseries. The X-ray spectra of 1eRASS J121314.8-645231 and 1eRASS J130116.8-613605 show good fits with the APEC models (although thermal Bremsstrahlung gives reasonable fits as well), while X-ray

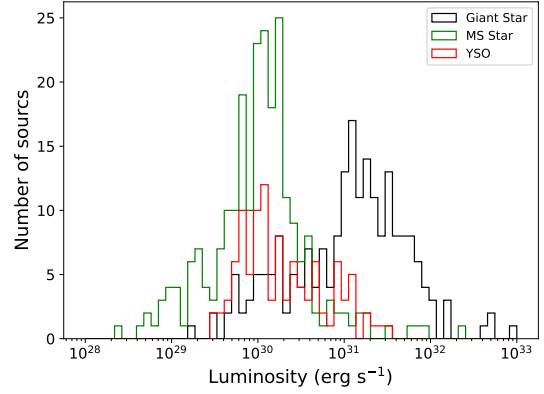


Figure 15. Luminosity histogram plot of YSOs, main sequence stars and giants in our sample of Galactic transients in eRASS1. Main sequence stars and giants are selected based on their position in the HR diagram.

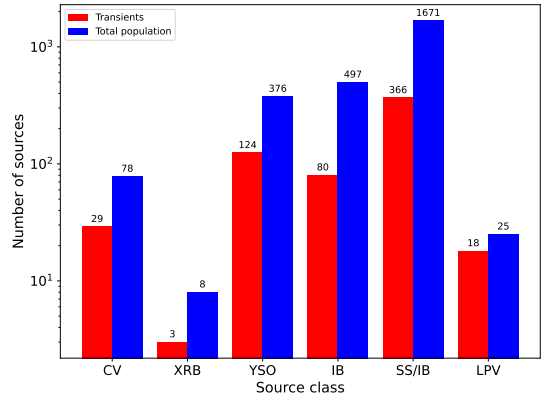


Figure 16. Transient population (red bars) in various classes, considered in this work, compared with the complete population of X-ray sources (blue bars) found in this work. Each bar has a number above it denoting the total number of sources in that class. The blue bars represent the sums of transient and non-variable (the not variable branch of the flowchart in Figure 4) X-ray sources detected in eRASS1. We have only used the subset of X-ray sources (having counterparts in Gaia) that are accompanied by definite *Simbad* classifications.

spectra of 1eRASS J111821.2-543729 show good fit with absorbed multicolor blackbody model. The corresponding best-fit temperature values are between 0.8–6 keV (see Figure 14). Two of these transients are known neutron star XRBs while the nature of compact object in 1eRASS J111821.2-543729 is uncertain. The optically thin (transient) emission from these systems may be from boundary layer or from the accretion columns (in case of highly magnetized neutron star systems), while the optically thick emission may be from accretion disk or from neutron star surface.

5 SUMMARY AND DISCUSSION

In this paper, we have presented a search for Galactic X-ray transients, having Gaia counterparts, between the eROSITA All Sky Survey 1 (eRASS1) and the Second *ROSAT* All-Sky Survey Point Source (2RXS) catalogs. This search enables us to find sources that are varying on timescales of <30 years. We found 738 transients and classified them based on

their existing *Simbad* classification, their position in the HR diagram, X-ray spectra, optical photometric data from Gaia DR3 and L_X into different categories such as "SS/IB", "IB", "IB/ACO", "LPV", "XRB", "CV", "YSO", "PSR", and "WR".

We analyzed eROSITA spectral data (0.2–10 keV) for the Galactic transients and fit thermal and non-thermal models, as shown in Figures 11 to 14. We found at least two distinct types of spectra for various classes of transients (Figures 11 and 13). The first type (upper panels of Figures 11 and 13) show a peak around 1 keV and are well fit by thermal emission models. The second type (lower panels of Figures 11 and 13) are monotonically decreasing spectra in the eROSITA band (i.e. they peak below 0.2 keV) and require a power-law component (with or without a thermal component) for achieving reasonable fits (31 transients).

It is possible that the monotonic X-ray spectra, requiring a power law component in their fits, are related to magnetic fields in the system. For example, magnetic CVs are known to have soft excess due to reprocessed blackbody radiation, that may give rise to powerlaw-like spectra (e.g. Trümper & Hasinger 2008). Moreover, we find that CVs in the upper panel of Figure 13 have X ray-to-optical flux ratio between 0.01–1, while those in the lower panel have X ray-to-optical flux ratio in the range 0.1–10. The former is characteristic of non-magnetic CVs while the latter is seen in their magnetic analogs (e.g. Trümper & Hasinger 2008; Mukai et al. 2003).

In order to investigate if the X-ray luminosities of transients show any systematic trends across the stellar evolutionary sequence, we plotted the X-ray luminosity histograms of our transients that have YSOs, main sequence stars and evolved stars (giants) (see Figure 15). Main-sequence and giant stars have been selected through careful manual inspection of the positions of Gaia counterparts of the transients in the HR diagram (Figure 7). Some previous studies (e.g. Skumanich 1972; Feigelson & Montmerle 1999; Feigelson et al. 1993) have indicated that YSOs are significantly more X-ray luminous compared to main sequence stars, primarily due to their rapid rotation and intense magnetic activity. However, we do not see any such clear trend in our sample of transients. We find the X-ray luminosity distributions to have mean and standard deviations of $30 \pm 0.6 \text{ erg s}^{-1}$ on log scale for main sequence stars and $30.2 \pm 0.5 \text{ erg s}^{-1}$ for YSOs. (Figure 15). One other striking feature, however, is that X-ray transients associated with giants are significantly more luminous than those associated only with main-sequence stars or YSOs. In a standard scenario we expect stars, as they evolve into giants, to lose angular momentum via stellar flares and mass ejection episodes. This leads to increased rotation period and decreased magnetic activity, further leading to the expectation that giants should not be very active in X-rays. Some previous studies using *ROSAT* and Einstein observatory have also confirmed that single giants are not very bright in X-rays (specially beyond spectral type K3) (e.g. Haisch et al. 1991; Haisch et al. 1992; Hünsch, M. et al. 1998) This leads us to speculate that the giants in our transient sample are either part of interacting binary systems or have anomalous magnetic fields associated with them.

In Figure 16 we show a bar plot, for various classes of Galactic X-ray transients found in our work, comparing the number of transients with the total population of Galactic eRASS1 sources (sum of transient and non-variable sources). To ensure reliable classification of X-ray sources we have considered only those subset of sources (transients as well

as non-variables) that have definite classifications in *Simbad*. Based on this Figure we can find the fraction of sources in any given source class that is expected to show transient behavior (during a blind observation of the X-ray sky). We therefore conclude that 37% of all CVs, 38% of all XRB, 33% of all YSOs, ~20% of all active stars or interacting binaries and 72% of all LPVs show transient behavior at any point of time (when compared with their X-ray activity a few decades ago).

Finally, based on the number of transients detected in each source class (see Section 3.1), we calculate the instantaneous all-sky Galactic X-ray transient occurrence rates in a flux limited all sky survey ($F > F_{\text{lim},2\text{RXS}}$) as follows. We first consider the completeness factors associated with our catalog cross-matching exercise (see Section 2). Since we are considering sources well beyond the flux thresholds where the completeness drops substantially (see Figure 1), we do not consider the completeness factors associated with the eRASS1 and 2RXS catalogs. In order to investigate the Gaia completeness factors, which we expect to be source class-dependent owing to their different optical-to-X-ray flux ratios, we cross-matched the 20655 eRASS1 sources (having $F_{\text{eRASS1}} > F_{\text{lim},2\text{RXS}}$) with dedicated catalogs. For example, the cross-match of the eRASS1 sources with the Galactic CV catalog (Canbay et al. 2023); matching radius is 5") resulted in 165 common sources in both catalogs, out of which 79 have counterparts in Gaia DR2 (satisfying the same selection criteria as those given in Section 2.4). Hence, we estimate the Gaia completeness factor for CVs to be ≈ 2 , and the transients occurrence rate is 160 sky^{-1} (~80 CVs in 2π steradian). Similarly we find $\sim 60 \text{ sky}^{-1}$ for X-ray binaries (using the Fortin et al. (2024) LMXRB catalog, and Fortin et al. (2023) HMXRB catalog), and $\sim 20 \text{ sky}^{-1}$ for both the pulsar and Wolf-Rayet classes (using the ATNF pulsar catalog Manchester et al. (2005) and Wolf-Rayet catalog Rate & Crowther (2020)). While we generally expect chromospherically active stars (single stars and interacting binaries in our categories "SS/IB", "YSO", "LPV", and "IB" taken together (645 transients)) to be optically "bright" and have close to 100% Gaia counterparts, we take a Gaia completeness factor x to find that the rate of these classes as $\sim x \times 1300 \text{ sky}^{-1}$.

6 ACKNOWLEDGMENTS

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7 DATA AVAILABILITY

eROSITA catalogues and spectral data products are available on the website <https://erosita.mpe.mpg.de/dr1/>, while detailed Table 2 is available in electronic form at CDS via anonymous ftp to cdsarc.u-strasbg.fr (130.79.128.5) or via <https://cdsarc.cds.unistra.fr/viz-bin/cat/J/MNRAS/544/885>.

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8 APPENDIX

Here we show the periodograms and the phase folded light curves associated with the three transients from Section 4.2, whose period is reported. LS periodograms are noisy but the reported periods are only for those transients, whose phase folded light curves look convincing by visual inspection. We also show the individual eROSITA spectra of the transients mentioned in the lower panel of Figure 13.

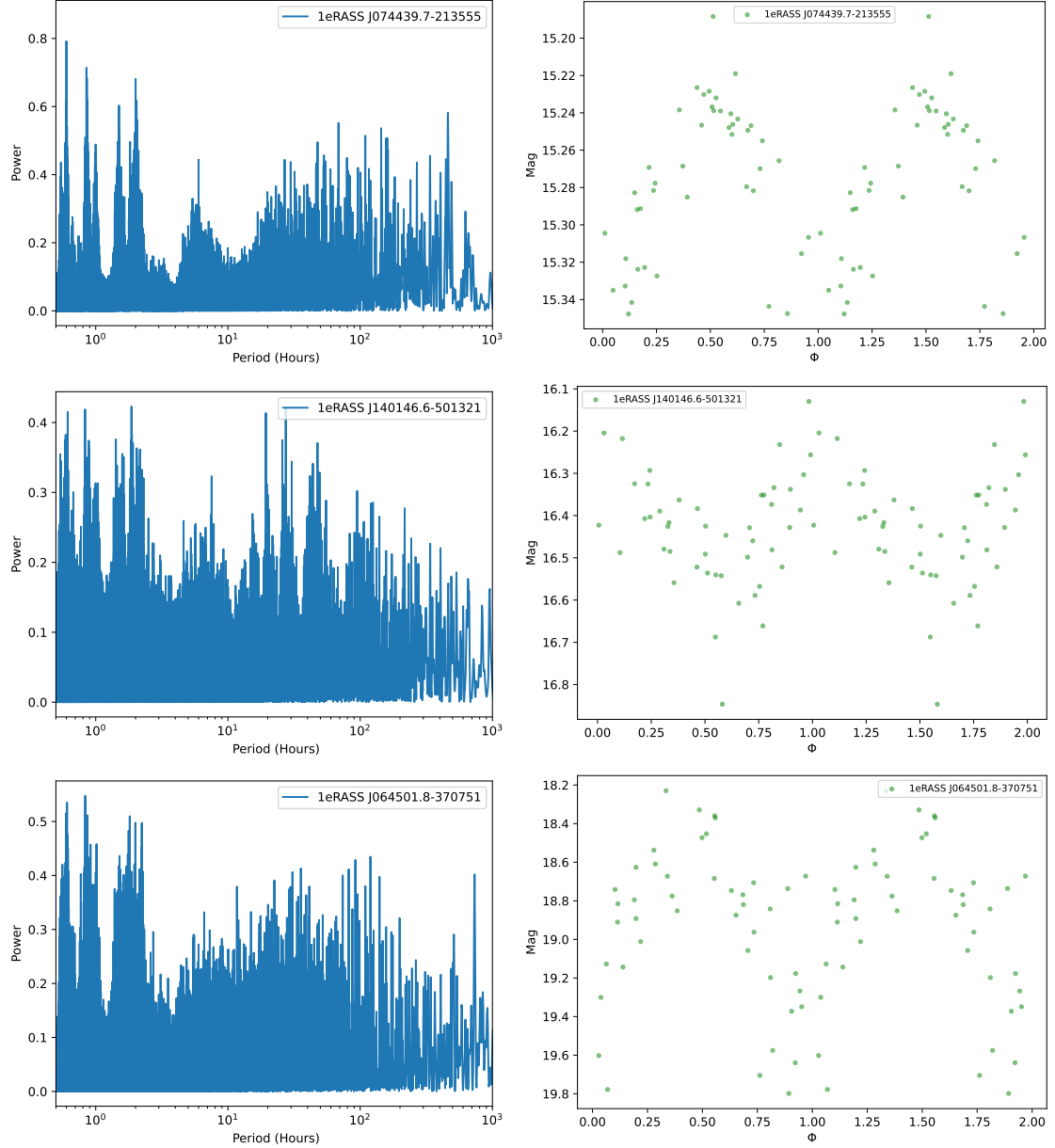


Figure 17. Periodograms and phase folded light curves associated with the 3 of the 9 new potential CVs identified in this analysis, created from G band photometric data of Gaia DR3. LS periodograms are noisy but the reported periods are only for those transients, whose phase folded light curves look convincing by visual inspection.

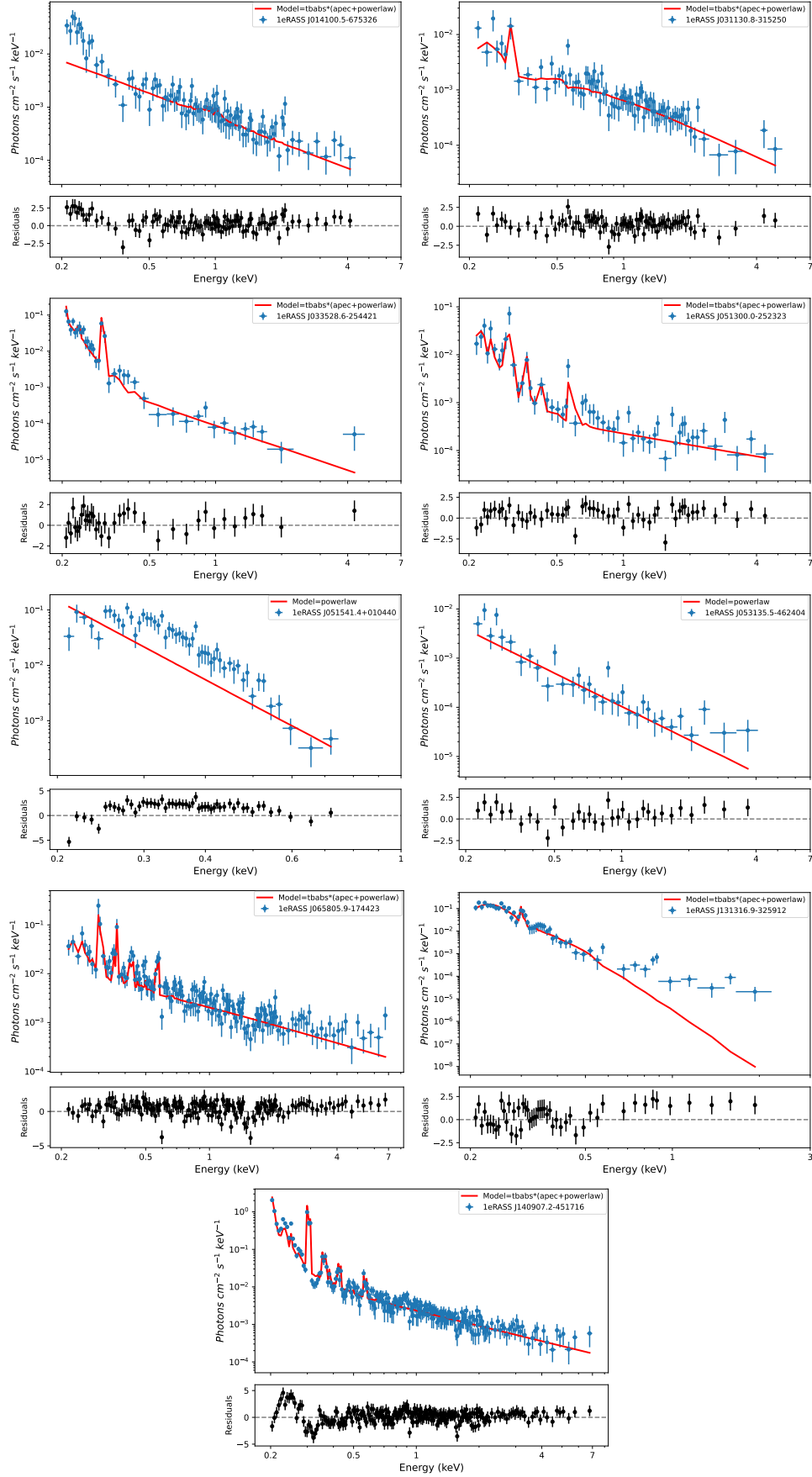


Figure 18. Individual eROSITA unfolded spectra of transients mentioned in the lower panel of Figure 13. Except "1eRASS J051541.4+010440" all other transients show good fit with either $\text{tbabs}^*(\text{apec} + \text{powerlaw})$ or powerlaw models.

Table 2: This Table presents the properties of Galactic transients from the eRASS1 survey. The quantities in parentheses indicate measurement errors. Right Ascension (RA) and Declination (DEC) are based on Gaia DR2 coordinates; we've omitted error details for these coordinates as they are relatively small, on the order of milli-arcseconds. The spectral luminosity classification for the transients is sourced either from *Simbad* or derived from temperature and radius data in Gaia DR2. Period (P) information is obtained from Gaia DR3. $\frac{F_{2RXS}}{F_{eRASS1}}$ value for the sources, unique to eRASS1, represents an upper limit.

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
CV											
J002133.2-514233	5.38841	-51.70967	105(9)	–	315(4)	125(11)	1.55	15.4	K V	–	<0.32
J003831.0-640312	9.62936	-64.05381	53(6)	–	333(18)	70(11)	0.37	18.3	–	–	<0.64
J004214.2-560920	10.55964	-56.15557	91(8)	–	621(44)	417(69)	0.60	17.6	–	–	<0.37
J014100.5-675326	25.25219	-67.89088	265(11)	2946(107)	131(1)	54(3)	0.76	17.2	A V	–	11.12
J031130.8-315250	47.87888	-31.88083	221(10)	–	274(9)	198(16)	0.10	16.3	A V	–	<0.15
J033528.6-254421	53.86947	-25.73939	104(7)	493(174)	240(4)	71(5)	0.59	16.7	M V	–	4.74
J051300.0-252323	78.25017	-25.38975	150(9)	–	623(61)	695(142)	1.73	18.4	–	–	<0.23
J051541.4+010440	78.92257	1.07789	394(18)	–	645(17)	1960(136)	0.74	15.6	M V	–	<0.08
J052113.8-520257	80.30762	-52.04978	71(4)	17(7)	545(15)	251(20)	0.39	16.1	A V	34	0.25
J052115.9+251331	80.31605	25.22542	55(7)	–	253(8)	42(6)	1.35	16.9	K V	–	<0.61
J052958.8+184810	82.49504	18.80277	98(10)	–	467(18)	254(32)	0.88	17.0	G V	–	<0.35
J053135.5-462404	82.89856	-46.40133	53(4)	1042(37)	291(4)	54(4)	0.92	16.1	G V	–	19.46
J053450.4-580140	83.71068	-58.02797	712(15)	213(16)	438(4)	1630(47)	0.23	14.2	A V	–	0.3
J054945.2-492155	87.43917	-49.36561	65(4)	–	318(8)	79(7)	0.61	17.1	–	–	<0.52
J064501.8-370751	101.25763	-37.13094	58(6)	13(7)	523(49)	190(41)	0.56	18.9	–	0.8	0.22
J064516.9-153506	101.32072	-15.58486	72(9)	–	882(20)	669(87)	0.15	14.1	A V	–	<0.47
J064517.2-165132	101.32169	-16.85957	1170(48)	–	303(4)	1290(62)	1.06	13.7	G V	–	<0.03
J065805.9-174423	104.52447	-17.74011	899(30)	259(27)	211(2)	476(19)	1.15	16.9	K V	–	0.29
J074439.7-213555	116.16625	-21.59889	52(7)	–	2653(252)	4390(1030)	1.48	15.3	K III	0.9	<0.64
J080819.2-233702	122.07966	-23.61698	83(9)	23(10)	666(36)	440(67)	0.25	13.1	K III	–	0.28
J081506.7-190318	123.77841	-19.05523	52(8)	6739(137)	137(1)	12(2)	0.55	15.9	M V	–	129.1
J090103.3+175354	135.26370	17.89887	50(8)	211(31)	448(9)	119(20)	0.53	12.6	F III	0.9	4.25
J100622.0-701404	151.59150	-70.23458	131(5)	30(9)	90(0)	13(1)	0.43	15.6	F V	–	0.23
J105430.4+300610	163.62689	30.10266	142(13)	41(13)	325(12)	179(21)	0.47	16.7	A V	–	0.29
J105749.9-215658	164.45799	-21.94965	48(7)	–	657(65)	249(60)	0.55	18.0	–	–	<0.7
J110016.3-424038	165.06848	-42.67706	155(10)	28(11)	382(4)	270(18)	0.29	14.0	A III	–	0.19
J113904.0-420748	174.76651	-42.13016	69(6)	–	702(39)	405(58)	0.24	14.6	G V	–	<0.49
J123632.5-664601	189.13579	-66.76712	145(7)	–	360(19)	224(26)	1.04	17.7	–	–	<0.24
J131316.9-325912	198.32121	-32.98693	285(13)	1888(80)	173(1)	101(5)	1.60	15.1	K V	–	6.62
J134338.4-081404	205.91012	-8.23439	96(8)	–	352(7)	142(13)	0.42	15.8	F V	–	<0.36
J140146.6-501321	210.44451	-50.22275	119(7)	–	1187(112)	1990(392)	1.15	16.5	K V	2	<0.29
J140907.2-451716	212.27981	-45.28775	1580(33)	7772(314)	112(3)	238(12)	0.75	16.7	M V	–	4.92
J143739.6-361325	219.41540	-36.22388	239(14)	–	554(15)	875(71)	-0.04	12.5	O III	–	<0.14
J153553.1-141312	233.97100	-14.22011	57(7)	–	276(4)	51(7)	-0.20	13.6	B V	–	<0.6
J180523.6-355911	271.34821	-35.98636	126(13)	–	442(13)	294(34)	0.55	15.4	F V	–	<0.27
J192933.0-560343	292.38787	-56.06195	111(11)	–	357(23)	169(27)	1.25	17.7	G V	–	<0.3
J194037.5-472450	295.15683	-47.41396	65(9)	–	349(7)	94(13)	0.49	16.7	F V	–	<0.52
J232023.5-484130	350.09859	-48.69165	79(8)	–	475(36)	214(40)	0.94	18.3	–	–	<0.42
IB											
J003243.1-653507	8.17857	-65.58572	57(6)	–	321(8)	70(8)	0.95	11.2	G III	11	<0.60
J005142.9-645717	12.92850	-64.95461	69(7)	–	434(4)	155(15)	1.11	11.5	K III	57	<0.49
J011824.8-232417	19.60360	-23.40478	197(12)	43(13)	344(4)	278(19)	1.12	9.3	G III	321	0.21
J012527.5-284656	21.36541	-28.78228	360(16)	49(11)	196(2)	166(8)	0.28	8.3	A III	52	0.14
J012727.4-364549	21.86420	-36.76384	92(6)	–	1196(84)	1570(248)	1.37	10.7	K III	252	<0.37
J023714.7-734335	39.31302	-73.72651	50(4)	–	117(0)	8(1)	1.35	11.5	K V	–	<0.68
J030739.9-785627	46.91568	-78.94107	50(4)	–	218(2)	28(3)	0.89	10.1	G III	–	<0.69
J031555.3-144257	48.98092	-14.71598	92(7)	–	265(3)	77(6)	0.83	10.0	G III	11	<0.36
J032339.6-275547	50.91546	-27.93001	44(4)	–	239(2)	30(3)	1.39	7.0	K III	–	<0.76
J032341.4-270821	50.92290	-27.13959	60(5)	–	128(1)	12(1)	1.55	12.8	K V	22	<0.57
J042735.2-251350	66.89690	-25.23109	42(5)	–	250(3)	32(4)	0.82	10.2	G III	17	<0.80
J045547.6+174201	73.94860	17.70052	143(11)	39(11)	123(1)	26(2)	1.29	10.9	K V	–	0.27

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J050652.2-301932	76.71702	-30.32586	73(6)	–	677(53)	401(71)	1.33	12.5	K III	23	<0.47
J050811.5+000413	77.04817	0.07062	44(6)	–	155(1)	13(2)	2.16	13.3	M V	–	<0.77
J051051.1+165336	77.71316	16.89308	47(6)	–	233(2)	31(4)	1.01	11.1	G III	–	<0.72
J051430.6-261232	78.62763	-26.20895	43(5)	–	193(1)	19(2)	1.33	6.6	K III	–	<0.79
J053159.7-072426	82.99937	-7.40764	105(9)	–	368(6)	170(16)	1.23	12.5	K III	28	<0.32
J053512.8-004406	83.80329	-0.73536	66(8)	–	336(11)	89(12)	-0.16	6.9	B III	–	<0.52
J053515.0-044442	83.81304	-4.74526	130(10)	–	459(9)	328(29)	1.24	10.8	K III	37	<0.26
J053529.7+103209	83.87362	10.53607	246(15)	17(8)	161(1)	76(5)	1.51	12.5	K V	11	0.08
J054039.7-201754	85.16560	-20.29880	252(13)	1752(61)	180(2)	97(5)	1.30	6.8	K III	–	6.95
J054053.9-020303	85.22484	-2.05052	56(7)	–	372(6)	93(12)	1.03	11.2	K III	52	<0.60
J054221.7+234021	85.59091	23.67251	42(7)	–	383(6)	74(12)	1.35	11.2	K III	–	<0.80
J055643.5+251417	89.18114	25.23831	59(8)	–	224(3)	36(5)	0.95	11.0	G III	–	<0.57
J061238.8-164835	93.16175	-16.80989	425(20)	1718(53)	141(1)	101(5)	1.32	9.0	K III	–	4.05
J061401.3-281541	93.50634	-28.26116	41(6)	–	42(0)	1(0)	3.12	14.1	K V	–	<0.82
J063338.4-171319	98.41061	-17.22195	298(17)	21(8)	390(5)	541(34)	1.28	11.5	K III	–	0.07
J064332.4-081824	100.88499	-8.30693	44(7)	–	802(17)	339(56)	1.38	13.2	K III	–	<0.77
J064956.1-503653	102.48426	-50.61484	299(10)	–	53(1)	10(1)	1.36	2.5	K III	–	<0.11
J065831.9-425426	104.63356	-42.90742	50(5)	–	724(9)	312(34)	1.45	13.1	K III	156	<0.68
J071100.0-563300	107.74976	-56.54964	53(4)	385(26)	48(0)	1(0)	2.22	12.2	M V	–	7.30
J073533.6-191151	113.89052	-19.19843	66(8)	–	36(0)	1(0)	2.64	12.6	M V	18	<0.52
J074615.6-425333	116.56477	-42.89264	46(5)	–	563(8)	175(21)	1.42	12.2	K III	262	<0.74
J074631.1-163824	116.63011	-16.64083	41(7)	–	462(8)	105(18)	1.35	9.4	K III	–	<0.83
J075807.3-375214	119.53015	-37.87071	61(6)	–	768(17)	431(49)	1.22	11.6	K III	321	<0.55
J080307.1-410734	120.77975	-41.12591	49(6)	–	173(1)	18(2)	1.10	6.6	G III	–	<0.69
J081312.8-212411	123.30355	-21.40309	83(10)	–	338(4)	114(13)	0.92	12.5	G V	–	<0.41
J081540.7-015505	123.92032	-1.91837	93(11)	–	160(1)	29(4)	0.91	10.3	G V	–	<0.36
J082803.9+355329	127.01684	35.89178	84(10)	–	98(6)	10(2)	1.09	6.6	K III	–	<0.40
J083106.2+111110	127.77623	11.18611	776(31)	213(63)	300(5)	835(43)	1.30	8.7	K III	86	0.27
J084311.5-790412	130.80021	-79.06998	58(4)	–	99(0)	7(0)	0.34	6.0	A III	20	<0.58
J084747.6+183324	131.94878	18.55681	45(8)	–	203(2)	22(4)	0.74	9.9	F III	–	<0.75
J084942.3-383559	132.42659	-38.60000	131(10)	22(9)	848(20)	1130(99)	1.28	11.1	G III	471	0.17
J085934.2-053404	134.89237	-5.56821	63(9)	–	344(5)	89(13)	1.18	10.2	K III	–	<0.53
J090206.3-645247	135.52595	-64.87954	44(3)	–	791(13)	328(27)	1.43	11.7	K III	305	<0.77
J091806.4-444537	139.52685	-44.76026	77(8)	21(9)	789(20)	574(66)	1.43	9.0	K III	280	0.28
J092506.2-432758	141.27576	-43.46610	75(8)	248(23)	435(5)	169(19)	1.47	11.1	M III	240	3.32
J093649.0-095005	144.20391	-9.83445	158(13)	36(10)	460(9)	398(36)	1.48	11.5	K III	–	0.23
J093758.2-084645	144.49313	-8.77901	171(14)	40(11)	366(8)	274(25)	1.13	10.3	K III	498	0.24
J100339.6-552254	150.91505	-55.38170	41(4)	–	962(31)	455(55)	1.47	12.6	K III	163	<0.82
J101855.9-482515	154.73306	-48.42066	99(7)	350(35)	324(3)	125(10)	1.28	9.7	K III	221	3.51
J103502.1+083900	158.75876	8.65041	61(9)	–	132(3)	13(2)	0.06	5.8	A III	–	<0.56
J104445.0-593355	161.18755	-59.56518	104(6)	–	2754(228)	9430(1660)	0.36	7.3	O III	–	<0.32
J104629.6-641547	161.62310	-64.26320	44(4)	–	147(4)	12(1)	-0.10	5.2	B III	–	<0.76
J105441.2-570615	163.67174	-57.10435	56(5)	–	773(17)	402(39)	0.71	12.9	F III	–	<0.60
J111109.3-475036	167.78872	-47.84370	43(5)	–	486(6)	123(14)	0.72	9.0	F III	64	<0.78
J112651.2-382454	171.71356	-38.41545	60(6)	–	68(0)	3(0)	2.80	13.0	M V	–	<0.57
J113423.9+234817	173.59923	23.80467	44(8)	–	174(2)	16(3)	–	13.6	–	–	<0.76
J120652.9-643650	181.72075	-64.61389	227(9)	–	19(0)	1(0)	0.47	4.0	F III	–	<0.15
J122254.6-141036	185.72761	-14.17635	181(13)	–	271(5)	159(13)	1.20	11.1	K III	47	<0.19
J123710.8-690808	189.29542	-69.13562	213(7)	–	116(11)	34(7)	–	10.9	B V	–	<0.16
J123823.8-640449	189.59878	-64.08069	61(5)	–	107(0)	8(1)	1.57	11.2	K V	–	<0.55
J124257.4-341745	190.73922	-34.29616	167(10)	–	323(9)	208(17)	1.57	8.0	K III	–	<0.20
J124718.9-661416	191.82812	-66.23741	279(10)	–	30(0)	3(0)	1.01	8.3	K V	–	<0.12
J125045.1+113336	192.68800	11.56034	171(12)	–	419(7)	360(28)	1.52	12.4	K III	–	<0.19
J130520.2-773900	196.33567	-77.65045	86(6)	–	196(1)	40(3)	1.90	11.6	K III	54	<0.39
J131001.1-552727	197.50465	-55.45741	67(6)	–	128(1)	13(1)	0.74	9.5	F V	28	<0.51
J132816.8-285616	202.06988	-28.93813	40(5)	–	521(10)	131(17)	1.40	12.2	K III	75	<0.84
J133857.2-490031	204.73802	-49.00870	45(5)	–	287(4)	44(5)	0.93	11.2	G III	–	<0.75
J133959.6-495659	204.99853	-49.94990	45(5)	–	164(10)	15(2)	3.29	3.8	M III	45	<0.75
J134710.6-521610	206.79380	-52.26933	106(7)	–	118(3)	18(2)	0.05	6.9	A III	–	<0.32
J134847.7-531636	207.19836	-53.27660	101(7)	–	123(1)	18(1)	1.19	10.5	K V	35	<0.34

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J135217.5-383716	208.07255	-38.62152	61(6)	–	103(1)	8(1)	0.65	8.3	F V	–	<0.55
J141404.5-560348	213.51894	-56.06336	55(6)	–	381(8)	95(12)	0.36	8.5	A III	–	<0.62
J142529.1-411333	216.37106	-41.22585	210(10)	–	63(0)	10(1)	2.52	11.4	M V	–	<0.16
J143512.2-174534	218.80126	-17.75955	102(8)	–	378(12)	175(18)	1.25	11.6	K III	155	<0.33
J143725.1-364322	219.35461	-36.72274	258(14)	–	147(2)	67(4)	0.23	8.0	A V	–	<0.14
J143803.5-493203	219.51442	-49.53407	55(5)	–	116(5)	9(1)	1.51	11.2	K V	–	<0.62
J144001.1-195933	220.00440	-19.99252	48(6)	–	172(5)	17(2)	0.95	9.9	G III	–	<0.70
J144209.6-284235	220.54011	-28.70993	55(6)	–	309(4)	63(7)	0.97	11.5	G III	13	<0.61
J144532.4-265634	221.38518	-26.94276	47(5)	–	108(2)	7(1)	0.41	8.0	A III	–	<0.72
J145041.0-155950	222.67122	-15.99750	76(7)	316(31)	23(0)	1(0)	0.57	5.0	F III	–	4.13
J145545.7-211411	223.94033	-21.23657	191(10)	–	73(0)	12(1)	1.67	11.2	K V	97	<0.18
J153309.4-242925	233.28954	-24.49057	77(9)	–	100(1)	9(1)	0.27	6.9	A III	–	<0.44
J154856.9-363922	237.23718	-36.65572	54(6)	–	188(3)	23(3)	0.83	9.5	F III	9	<0.63
J160517.9-202419	241.32460	-20.40555	55(6)	–	140(1)	13(2)	2.53	13.1	M V	17	<0.62
J160628.6-273616	241.61946	-27.60496	53(6)	–	159(2)	16(2)	2.14	13.0	M V	22	<0.63
J161519.4-254013	243.83117	-25.67011	57(7)	–	134(2)	12(1)	2.46	13.0	M V	17	<0.60
J165256.1-264503	253.23335	-26.75070	100(9)	356(34)	298(12)	106(13)	1.29	8.1	K III	–	3.56
J165422.0-380554	253.59172	-38.09856	43(6)	–	59(1)	2(0)	0.80	8.2	G V	–	<0.78
J165550.2-604459	253.95874	-60.74964	54(6)	–	582(16)	220(28)	1.44	9.1	K III	680	<0.63
J170529.2-362025	256.37158	-36.34093	80(11)	–	816(67)	633(138)	0.83	12.5	G III	–	<0.42
J170641.3-282603	256.67207	-28.43445	42(6)	–	559(21)	158(27)	1.41	11.6	K III	160	<0.80
J171538.5-700938	258.90941	-70.16072	50(6)	–	810(18)	394(49)	1.35	12.6	K III	456	<0.68
J172717.8-734210	261.82395	-73.70302	56(6)	–	113(0)	9(1)	0.88	9.7	G V	–	<0.61
J180819.0-462721	272.07942	-46.45616	154(14)	–	117(1)	25(2)	–	11.2	–	–	<0.22
J181259.6-700907	273.24927	-70.15179	49(7)	–	49(0)	1(0)	2.45	12.0	M V	–	<0.69
J183223.9-384132	278.09981	-38.69207	57(9)	–	585(16)	234(38)	1.51	9.0	K III	19	<0.59
J184515.5-383417	281.31459	-38.57205	114(12)	–	279(6)	107(12)	0.98	9.9	G III	–	<0.30
J185405.1-513057	283.52074	-51.51599	130(12)	–	175(2)	47(5)	0.76	9.6	G III	–	<0.26
J191842.8-414229	289.67812	-41.70817	66(9)	–	102(0)	8(1)	0.97	10.3	G V	–	<0.52
J192247.8-642358	290.69939	-64.39960	57(8)	–	359(5)	87(12)	1.19	10.3	K III	–	<0.60
J192558.4-563335	291.49407	-56.56030	162(13)	6730(354)	131(2)	33(3)	0.90	10.4	G V	–	41.54
J192714.5-451312	291.81051	-45.22010	59(9)	–	567(15)	228(35)	1.22	8.9	G III	1554	<0.57
J205731.2-524559	314.38072	-52.76631	51(8)	–	363(4)	80(12)	1.01	10.6	G III	59	<0.66
J211733.2-712139	319.38879	-71.36099	47(6)	–	126(1)	9(1)	0.72	9.2	G V	–	<0.71
J220339.7-505834	330.91429	-50.97699	44(7)	–	101(0)	5(1)	1.56	11.8	K V	–	<0.76
J220610.3-460353	331.54268	-46.06436	66(8)	–	582(13)	266(35)	1.41	12.5	K III	101	<0.52
J221536.9-412047	333.90407	-41.34658	51(8)	–	74(2)	3(1)	0.98	4.5	G III	–	<0.67
J233130.2-405843	352.87583	-40.97911	52(7)	–	192(2)	23(3)	0.75	10.2	F V	4.5	<0.65
IB/ACO											
J030617.2-681230	46.57203	-68.20831	81(5)	–	153(1)	23(1)	0.75	9.4	F III	5	<0.41
J031732.8-150508	49.38697	-15.08580	84(7)	–	73(0)	5(0)	1.29	10.5	K V	0.9	<0.40
J034105.1-302508	55.27182	-30.41887	84(6)	–	107(0)	12(1)	1.03	9.6	G III	4	<0.40
J041533.4+014556	63.88952	1.76601	60(7)	–	135(1)	13(2)	0.95	10.3	G V	4	<0.56
J052244.1-010251	80.68394	-1.04803	71(8)	–	277(3)	65(7)	1.08	11.1	K III	2	<0.47
J054434.0-012202	86.14224	-1.36723	154(12)	38(10)	297(14)	162(20)	2.57	12.4	M III	2	0.25
J054610.5+224620	86.54406	22.77255	57(8)	–	234(3)	37(5)	1.44	7.8	K III	0.9	<0.60
J073504.1-330900	113.76775	-33.14984	41(6)	–	149(1)	11(2)	0.91	10.3	G V	4	<0.82
J074205.1+325248	115.52108	32.88023	125(13)	–	685(19)	700(84)	1.11	11.8	K III	2	<0.27
J092939.4-101000	142.41419	-10.16717	169(13)	20(10)	480(13)	463(44)	1.09	11.0	K III	0.8	0.12
J095245.6+134722	148.18981	13.78920	49(8)	–	359(11)	76(14)	0.91	11.5	G III	6	<0.69
J095841.5+201301	149.67309	20.21700	47(7)	–	655(20)	242(41)	1.05	11.9	G III	0.8	<0.72
J104241.2-642103	160.67281	-64.35116	85(5)	–	161(2)	26(2)	0.87	10.4	G V	0.9	<0.40
J104951.1+265603	162.46307	26.93389	70(9)	18(10)	656(16)	358(50)	1.24	11.9	K III	1.8	0.27
J105449.9-652646	163.70804	-65.44602	47(4)	–	153(1)	13(1)	1.24	11.8	K V	0.9	<0.73
J112121.7-473602	170.34069	-47.60090	236(11)	–	70(0)	14(1)	1.35	10.0	K V	6	<0.14
J114949.9-333628	177.45881	-33.60781	43(5)	–	234(6)	28(4)	0.93	11.1	G V	6	<0.79
J121618.0-610531	184.07453	-61.09221	46(4)	–	207(1)	24(2)	0.86	9.7	G III	6	<0.74
J122419.4-085331	186.08108	-8.89184	72(8)	–	142(1)	18(2)	1.12	11.3	K V	0.9	<0.47
J123420.5-481515	188.58581	-48.25382	118(8)	–	114(1)	19(1)	2.48	13.4	M V	0.8	<0.29

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J132939.5+151741	202.41459	15.29466	55(6)	–	182(1)	22(3)	0.92	10.9	G V	4	<0.61
J133007.7+113728	202.53208	11.62403	58(6)	–	581(21)	234(31)	1.24	10.6	K III	0.9	<0.58
J133154.7-481447	202.97818	-48.24663	75(7)	–	133(2)	16(1)	2.37	12.5	K V	2	<0.45
J135301.1-521327	208.25472	-52.22402	201(10)	–	126(1)	38(2)	0.95	9.5	F III	0.9	<0.17
J142758.3-392327	216.99329	-39.39127	41(4)	–	145(3)	10(1)	2.81	13.9	K V	0.9	<0.82
J143206.3-354451	218.02631	-35.74726	97(7)	–	138(2)	22(2)	1.18	10.8	K V	1.8	<0.35
J143542.1-460637	218.92545	-46.11075	68(7)	–	853(52)	586(91)	1.40	10.6	K III	0.9	<0.50
J145733.9-134216	224.39142	-13.70468	74(7)	–	242(3)	52(5)	0.45	8.8	A III	0.9	<0.46
J145825.2-355908	224.60566	-35.98546	74(8)	–	140(1)	17(2)	1.85	12.0	K V	0.9	<0.46
J150226.1-340514	225.60830	-34.08715	55(7)	–	153(1)	15(2)	1.44	11.9	K V	4	<0.62
J150737.7-460315	226.90715	-46.05443	87(9)	–	147(1)	23(2)	1.26	11.3	K V	2	<0.39
J151208.2-055124	228.03434	-5.85704	41(5)	–	348(5)	60(7)	1.28	11.2	K III	0.9	<0.82
J151421.6-462141	228.58964	-46.36154	66(8)	–	404(7)	130(15)	1.19	11.3	K III	2	<0.51
J154350.9-374216	235.96258	-37.70451	45(7)	–	125(1)	9(1)	1.53	11.7	K V	2	<0.75
J155733.0-483510	239.38758	-48.58603	50(6)	274(29)	133(1)	11(1)	1.65	12.1	K V	0.9	5.44
J160357.6-203106	240.99024	-20.51832	42(6)	–	142(1)	10(2)	1.83	12.1	K V	0.9	<0.80
J162020.3-784145	245.08646	-78.69591	111(7)	–	193(10)	49(6)	2.49	3.2	M III	0.9	<0.30
J162417.0-362839	246.07154	-36.47763	47(6)	–	162(2)	15(2)	1.17	10.7	K III	2	<0.72
J163120.0-243003	247.83381	-24.50151	107(9)	–	145(1)	27(2)	1.62	10.4	G III	0.9	<0.31
J170056.0-275404	255.23341	-27.90124	61(8)	–	269(3)	53(7)	1.27	12.9	K V	7	<0.56
J172759.5-360734	261.99831	-36.12640	51(7)	–	130(1)	10(1)	1.56	11.6	K V	0.9	<0.67
J174307.8-832512	265.77971	-83.42006	64(6)	–	148(1)	17(1)	0.98	10.3	G III	4	<0.53
J174554.0-311502	266.47506	-31.25096	49(7)	–	392(8)	90(14)	1.53	12.3	K III	2	<0.69
J181537.2-352553	273.90549	-35.43192	42(7)	–	1394(61)	972(190)	1.17	14.1	K III	2	<0.80
J183912.1-385954	279.80095	-38.99823	71(10)	–	527(16)	235(35)	1.38	11.7	K III	0.9	<0.47
J185720.8-364301	284.33687	-36.71697	84(10)	–	144(1)	21(3)	1.12	10.7	G V	0.9	<0.41
J200047.1-535829	300.19632	-53.97528	46(7)	–	756(21)	317(53)	1.23	12.4	K III	0.9	<0.73
J200145.0-592233	300.43662	-59.37600	192(14)	–	142(9)	46(7)	3.06	3.0	M III	0.9	<0.18
J220813.7-761713	332.05739	-76.28665	78(7)	–	210(6)	41(5)	0.85	9.9	F III	6	<0.43
J223300.1-615856	338.25063	-61.98221	70(8)	–	84(2)	6(1)	2.42	3.6	M III	0.9	<0.48
LPV											
J040054.0-620932	60.22422	-62.15913	108(5)	–	140(5)	25(2)	2.26	3.2	M III	–	<0.31
J044026.4-194018	70.11058	-19.67190	109(8)	–	121(4)	19(2)	2.15	3.2	M III	–	<0.31
J101704.8-611956	154.27050	-61.33228	254(10)	–	230(21)	161(29)	1.64	2.7	K III	–	<0.14
J114844.9-264459	177.18768	-26.74982	60(7)	–	134(6)	13(2)	2.68	3.7	M III	–	<0.57
J134926.5-342703	207.36110	-34.45103	322(13)	–	63(4)	15(2)	2.45	2.5	M III	–	<0.10
J140519.7-764748	211.33117	-76.79690	212(10)	–	108(8)	30(5)	5.22	4.4	M III	–	<0.16
J141417.2-475023	213.57147	-47.84023	44(6)	–	365(7)	70(10)	1.27	8.6	K III	–	<0.76
J143248.5-333234	218.20220	-33.54252	64(6)	–	508(45)	197(40)	1.46	11.0	K III	–	<0.53
J161804.7-595743	244.51993	-59.96182	46(6)	–	1102(43)	672(97)	1.39	10.8	K III	2094	<0.73
J182318.0-532535	275.82435	-53.42672	111(11)	–	437(9)	252(27)	1.42	8.3	G III	–	<0.30
J222002.1-802624	335.00846	-80.43993	154(10)	–	75(3)	11(1)	2.93	3.2	M III	–	<0.22
J222945.4-434457	337.43922	-43.74921	228(15)	–	82(4)	19(2)	2.18	2.9	M III	–	<0.15
PSR											
J043715.9-471509	69.31660	-47.25268	106(5)	–	120(10)	18(3)	1.55	20.4	–	–	<0.32
SS/IB											
J000808.0-563428	2.03365	-56.57455	45(6)	–	66(0)	2(0)	2.05	11.8	K V	–	<0.75
J001047.3-572912	2.69671	-57.48749	59(7)	–	179(1)	23(3)	0.77	9.3	F III	–	<0.58
J002315.8-331002	5.81635	-33.16698	45(7)	–	22(0)	1(0)	1.32	8.4	K V	67	<0.75
J002514.9-613048	6.31189	-61.51365	96(8)	–	44(0)	2(0)	1.83	10.7	M V	–	<0.36
J002540.6-344943	6.41878	-34.82899	42(7)	–	164(1)	14(2)	0.56	9.4	F III	–	<0.80
J002623.1-310803	6.59631	-31.13462	67(9)	–	214(4)	37(5)	0.86	11.5	G V	–	<0.51
J003025.6-623602	7.60792	-62.60067	172(11)	–	44(1)	4(0)	2.40	11.1	M V	–	<0.19
J005218.4-682623	13.07798	-68.43977	115(8)	–	708(12)	687(55)	1.04	11.8	G III	–	<0.30
J010050.8-464509	15.21250	-46.75250	69(8)	–	815(15)	551(65)	1.29	13.0	G III	–	<0.49
J020000.3-210441	30.00190	-21.07794	89(7)	–	92(3)	9(1)	1.82	3.2	K III	–	<0.38
J021654.7-232211	34.22785	-23.36953	66(6)	268(31)	73(0)	4(0)	2.71	13.6	K V	–	4.06
J021935.7-455108	34.89886	-45.85200	42(5)	–	118(0)	7(1)	1.85	13.2	K V	–	<0.80

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J023315.4-143632	38.31463	-14.60923	66(6)	–	28(0)	1(0)	2.82	13.5	M V	–	<0.52
J024235.1-624559	40.64565	-62.76624	51(5)	–	777(17)	369(40)	1.31	10.6	K III	–	<0.66
J025214.7-163712	43.06145	-16.62018	51(5)	–	473(10)	136(15)	1.10	11.1	G III	–	<0.67
J030322.7-484155	45.84508	-48.69925	44(4)	–	262(2)	36(4)	1.05	9.0	G III	–	<0.78
J030652.6-144632	46.71958	-14.77545	144(9)	–	328(4)	185(12)	1.19	10.4	G III	–	<0.24
J030825.8-592225	47.10869	-59.37365	42(4)	–	309(3)	48(5)	0.25	9.0	B III	–	<0.80
J030942.3-093448	47.42659	-9.58009	50(5)	–	38(0)	1(0)	0.94	8.3	G V	–	<0.68
J031003.0-234132	47.51316	-23.69249	65(5)	–	26(0)	1(0)	2.71	12.2	K V	–	<0.52
J031601.0-681938	49.00503	-68.32757	60(4)	–	501(6)	179(14)	1.15	10.2	G III	–	<0.57
J031922.0-222224	49.84165	-22.37309	42(4)	–	129(1)	8(1)	0.87	9.3	G III	–	<0.81
J032424.4-135935	51.10195	-13.99280	45(5)	–	258(14)	36(6)	0.41	9.0	F III	–	<0.75
J032425.2-155004	51.10497	-15.83482	64(6)	–	115(1)	10(1)	1.28	11.5	K V	–	<0.52
J032628.8-043803	51.62064	-4.63429	74(7)	–	180(1)	29(3)	0.93	10.8	G V	–	<0.46
J032807.5-355443	52.03120	-35.91209	129(7)	–	104(0)	17(1)	0.76	9.2	F V	–	<0.26
J033131.6-240248	52.88238	-24.04674	90(6)	–	162(1)	28(2)	0.91	10.9	G V	–	<0.38
J034637.8-390639	56.65858	-39.11112	72(5)	–	43(0)	2(0)	2.80	13.4	M V	–	<0.47
J035439.5-011907	58.66522	-1.31915	114(10)	–	129(1)	23(2)	1.45	12.5	K V	–	<0.30
J035936.6-395315	59.90312	-39.88758	406(11)	–	139(0)	94(3)	1.36	9.2	K III	–	<0.08
J040037.1-601400	60.15549	-60.23323	48(3)	–	402(7)	92(8)	1.31	11.6	K III	–	<0.71
J040253.7-103242	60.72420	-10.54465	45(6)	–	361(6)	71(10)	1.19	13.0	K V	–	<0.75
J040935.5-815117	62.39832	-81.85484	60(5)	–	244(10)	43(5)	3.49	8.0	M III	–	<0.56
J041425.1-622737	63.60410	-62.46022	88(4)	622(25)	49(0)	3(0)	2.07	11.2	M V	–	7.09
J041525.3-212214	63.85650	-21.37063	65(7)	–	87(1)	6(1)	3.00	14.8	K V	–	<0.52
J042323.8+142540	65.84973	14.42785	190(12)	37(11)	49(0)	5(0)	2.94	13.6	M V	–	0.19
J042402.2-340058	66.00954	-34.01664	62(5)	–	83(2)	5(1)	1.66	3.3	K III	–	<0.55
J042436.4-754132	66.15105	-75.69210	165(7)	36(12)	182(2)	65(3)	–	13.6	–	–	0.21
J042442.5-064731	66.17822	-6.79201	50(6)	175(29)	35(0)	1(0)	2.89	12.5	M V	–	3.50
J042720.6-055038	66.83614	-5.84405	46(6)	–	175(3)	17(2)	0.10	7.7	A III	–	<0.74
J043810.6+154917	69.54442	15.82139	68(7)	–	47(0)	2(0)	2.92	14.4	M V	–	<0.50
J043930.0-323306	69.87547	-32.55184	513(17)	57(18)	391(4)	934(35)	1.09	10.1	K III	–	0.11
J044143.0+082621	70.42948	8.43925	199(12)	55(14)	42(0)	4(0)	3.04	14.1	K V	–	0.28
J044358.5-364318	70.99451	-36.72189	189(10)	47(17)	53(0)	6(0)	2.89	13.7	M V	–	0.25
J044621.5-210736	71.59002	-21.12710	122(9)	28(10)	491(16)	352(34)	1.16	11.1	K III	–	0.23
J045231.8+141500	73.13318	14.25041	74(8)	–	162(11)	23(4)	2.48	3.5	M III	–	<0.46
J045304.6-012708	73.26986	-1.45246	67(7)	–	177(2)	25(3)	2.35	14.2	M V	–	<0.51
J045538.4-334754	73.91089	-33.79851	84(6)	–	44(0)	2(0)	2.58	13.0	K V	–	<0.41
J045736.2+110250	74.40071	11.04742	107(9)	29(10)	125(1)	20(2)	1.93	13.0	M V	–	0.26
J050150.9-413907	75.46227	-41.65218	129(6)	38(15)	101(0)	16(1)	1.23	11.5	K V	–	0.30
J050159.9+013633	75.50008	1.60890	48(6)	–	184(2)	19(3)	-0.11	6.5	B III	–	<0.71
J050527.6-222217	76.36538	-22.37136	291(12)	–	62(1)	13(1)	1.59	2.5	K III	–	<0.12
J050644.5-193249	76.68514	-19.54753	70(7)	–	145(2)	18(2)	1.64	13.0	K V	–	<0.48
J051518.5-012432	78.82693	-1.40878	63(7)	–	60(2)	3(0)	0.57	6.0	F III	–	<0.53
J051527.4+063601	78.86432	6.60049	44(6)	–	135(1)	10(1)	0.89	10.8	K V	–	<0.78
J052036.1+244837	80.15082	24.81033	47(7)	–	171(3)	16(2)	–	13.6	–	–	<0.73
J052114.3-103215	80.30970	-10.53752	44(6)	–	173(1)	16(2)	1.16	12.1	K V	–	<0.77
J052155.9-330713	80.48307	-33.12019	98(7)	–	53(0)	3(0)	2.36	12.2	K V	–	<0.35
J052329.0+051304	80.87095	5.21726	40(6)	–	61(0)	2(0)	1.25	10.3	K V	178	<0.84
J052351.7-083407	80.96584	-8.56895	50(6)	–	171(4)	18(2)	1.73	12.0	K V	–	<0.68
J052402.0+192244	81.00909	19.37877	68(8)	–	59(0)	3(0)	–	13.1	–	–	<0.49
J052604.7+004340	81.51926	0.72748	51(7)	–	488(22)	147(23)	0.08	9.2	A III	–	<0.66
J053034.7-010914	82.64506	-1.15430	237(15)	–	324(4)	298(20)	1.36	12.3	G III	–	<0.14
J053112.8-352813	82.80326	-35.47065	41(4)	–	80(2)	3(0)	1.32	3.4	K III	–	<0.82
J053118.4-054212	82.82669	-5.70377	50(7)	–	455(8)	124(17)	1.06	9.2	G III	–	<0.68
J053401.7-044443	83.50740	-4.74508	55(7)	–	381(4)	95(12)	1.05	11.5	G III	–	<0.62
J053427.7-053155	83.61543	-5.53204	41(6)	–	400(6)	78(11)	1.58	11.7	G III	–	<0.84
J053455.9-052312	83.73322	-5.38696	300(16)	–	396(6)	564(35)	1.63	11.1	K III	–	<0.11
J053509.0-052958	83.78774	-5.49979	69(8)	–	408(8)	138(16)	1.49	12.7	K V	–	<0.49
J053514.8-055141	83.81202	-5.86176	65(7)	–	386(6)	116(14)	1.31	12.2	K III	–	<0.52
J053529.8-053252	83.87432	-5.54819	72(8)	–	386(8)	127(15)	1.40	12.0	G III	–	<0.47
J053553.8-050414	83.97489	-5.07097	40(6)	–	270(9)	35(6)	2.27	14.5	M V	–	<0.84

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J053625.5-064257	84.10596	-6.71603	44(6)	–	489(38)	126(26)	1.52	10.5	K III	–	<0.77
J053739.6-283735	84.41523	-28.62631	49(5)	–	59(0)	2(0)	0.56	7.2	F III	–	<0.69
J053850.1-132050	84.70883	-13.34706	56(6)	–	174(1)	20(2)	0.78	10.5	G V	–	<0.61
J053911.7+223926	84.79851	22.65740	44(7)	–	259(9)	35(6)	1.40	13.5	K V	–	<0.76
J053954.2-051117	84.97596	-5.18830	48(6)	–	407(9)	94(13)	1.49	11.0	K III	–	<0.71
J054212.8-373816	85.55339	-37.63829	54(5)	–	57(0)	2(0)	2.04	11.7	K V	–	<0.63
J055127.9+182640	87.86612	18.44417	55(7)	–	173(1)	20(3)	1.02	6.8	G III	–	<0.61
J055654.6-082303	89.22803	-8.38402	69(7)	–	401(11)	133(16)	1.20	6.6	K III	–	<0.49
J055851.9-271143	89.71687	-27.19550	67(6)	–	155(2)	19(2)	1.04	11.2	K V	–	<0.51
J060602.2-483004	91.50986	-48.50120	49(4)	13(5)	1400(49)	1160(132)	1.44	11.9	K III	–	0.26
J060858.1+053246	92.24202	5.54601	82(10)	–	80(0)	6(1)	2.59	14.9	M V	–	<0.41
J061448.8+093428	93.70309	9.57435	45(8)	–	427(10)	99(17)	0.66	12.5	G V	–	<0.75
J061555.6+124254	93.98188	12.71510	43(7)	–	280(4)	40(7)	1.14	13.1	K V	–	<0.79
J061805.7+091912	94.52360	9.31983	84(11)	–	106(0)	11(1)	1.10	10.7	K V	–	<0.40
J061952.8-153308	94.96996	-15.55241	43(7)	–	407(12)	85(14)	0.15	9.7	A III	–	<0.79
J062018.8-300346	95.07834	-30.06335	68(7)	–	100(7)	8(1)	–	6.8	B V	–	<0.50
J063036.4-062243	97.65196	-6.37905	128(12)	27(9)	260(4)	104(10)	–	13.4	–	–	0.21
J063206.8-054753	98.02808	-5.79815	132(12)	35(10)	449(12)	318(34)	1.20	8.2	G III	–	0.26
J063259.8-463302	98.24892	-46.55022	52(5)	–	102(0)	7(1)	1.71	12.7	K V	–	<0.65
J063341.8-744203	98.42536	-74.70080	41(2)	–	89(0)	4(0)	1.02	9.8	K V	–	<0.84
J063432.2+305715	98.63462	30.95463	95(11)	–	162(2)	30(4)	0.33	8.4	A III	–	<0.36
J063440.8-695306	98.67102	-69.88488	219(3)	–	71(0)	13(0)	0.88	9.1	G V	–	<0.15
J063502.1-695152	98.75991	-69.86423	69(2)	–	72(0)	4(0)	1.59	11.3	K V	–	<0.49
J063745.7-431146	99.44030	-43.19595	50(5)	–	112(8)	8(1)	0.10	3.0	B III	–	<0.68
J064310.7+123549	100.79469	12.59703	46(8)	232(23)	131(1)	9(2)	1.04	11.3	G V	–	4.99
J064319.1+281604	100.82959	28.26832	61(9)	–	658(21)	314(52)	1.39	9.4	K III	–	<0.56
J064515.3+270931	101.31386	27.15919	59(9)	–	1841(105)	2370(459)	0.48	13.0	A III	–	<0.58
J064557.6-122218	101.49036	-12.37155	55(8)	–	186(14)	23(5)	1.11	12.3	K V	–	<0.61
J064622.0-204147	101.59250	-20.69663	153(12)	–	715(20)	935(90)	1.32	9.5	G III	–	<0.22
J064640.7+082145	101.66972	8.36306	468(24)	101(17)	73(1)	30(2)	0.48	7.0	F IV	–	0.21
J064822.3+045536	102.09297	4.92623	61(9)	–	512(17)	191(30)	1.28	9.8	G III	–	<0.56
J065027.1-320318	102.61366	-32.05531	541(20)	33(10)	31(0)	6(0)	3.05	13.8	K V	–	0.06
J065145.7+050502	102.94064	5.08440	50(8)	–	1114(57)	741(140)	0.21	6.8	B III	–	<0.68
J065654.3-142500	104.22639	-14.41639	116(11)	591(40)	470(9)	306(32)	1.38	8.8	K III	–	5.10
J065736.0-492701	104.39997	-49.45014	41(4)	–	192(1)	18(2)	0.52	9.2	F III	–	<0.82
J065824.5-095403	104.60188	-9.90105	72(9)	–	136(2)	16(2)	2.69	15.4	M V	–	<0.47
J070253.1-135145	105.72119	-13.86310	83(9)	16(7)	774(29)	596(81)	1.42	12.7	K III	–	0.19
J070323.1+243427	105.84630	24.57444	73(10)	–	752(23)	493(72)	1.41	12.1	K III	–	<0.47
J070547.5+150121	106.44839	15.02259	127(13)	–	548(11)	453(50)	1.23	9.2	G III	–	<0.26
J071213.0+251110	108.05449	25.18668	63(9)	–	2675(243)	5370(1260)	1.24	12.6	K III	–	<0.54
J071243.8+215338	108.18245	21.89424	113(12)	23(10)	774(31)	810(109)	1.10	9.2	G III	–	0.21
J071547.5-463926	108.94827	-46.65722	45(5)	–	567(7)	173(20)	1.29	10.0	K III	–	<0.75
J071634.9-275251	109.14574	-27.88101	42(6)	–	120(4)	7(1)	2.17	3.7	M III	–	<0.80
J072030.3-063613	110.12655	-6.60374	44(8)	–	141(1)	10(2)	0.80	7.7	G III	–	<0.77
J072447.1-485245	111.19651	-48.87884	41(4)	–	94(0)	4(0)	0.70	8.8	F V	–	<0.83
J072708.9+081720	111.78745	8.28915	100(11)	–	49(3)	3(0)	–	7.5	B V	–	<0.34
J072850.5-822850	112.21047	-82.48086	75(4)	22(10)	177(1)	28(2)	0.94	10.6	G III	–	0.30
J073144.0-470001	112.93382	-47.00028	44(5)	–	428(4)	96(10)	1.25	10.8	K III	–	<0.77
J073312.0-711535	113.29951	-71.26015	73(3)	–	102(5)	9(1)	0.96	10.6	K V	–	<0.47
J073600.1-593629	114.00158	-59.60786	49(4)	–	105(0)	7(1)	1.38	11.6	K V	–	<0.69
J073633.1+210929	114.13794	21.15774	74(10)	–	64(0)	4(0)	2.64	14.5	K V	–	<0.46
J073900.7+345110	114.75382	34.85311	52(8)	–	168(1)	17(3)	1.02	11.8	K V	–	<0.65
J074112.7+212647	115.30296	21.44673	226(17)	34(11)	228(3)	139(11)	1.34	7.5	K III	–	0.15
J074515.0-381146	116.31212	-38.19617	56(6)	–	194(1)	25(3)	0.67	10.3	G V	–	<0.60
J074515.1-375807	116.31368	-37.96856	236(13)	–	248(23)	174(34)	1.81	2.7	K III	–	<0.14
J074704.8-411346	116.77023	-41.23000	74(6)	–	181(1)	29(3)	0.86	10.4	G V	–	<0.46
J074753.0-402014	116.97069	-40.33702	106(8)	–	209(1)	55(4)	0.93	9.2	G III	–	<0.32
J074917.6-245134	117.32354	-24.85980	108(10)	–	312(29)	126(27)	1.32	2.9	G III	–	<0.31
J075140.8+252739	117.92023	25.46112	73(10)	–	134(1)	16(2)	0.96	10.8	G V	–	<0.46
J075218.0-461357	118.07527	-46.23265	106(8)	–	187(1)	44(3)	0.95	11.5	G V	–	<0.32

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J075334.8-005213	118.39544	-0.87039	48(8)	–	161(1)	15(2)	1.00	11.4	G V	–	<0.71
J075508.7-122555	118.78648	-12.43212	57(8)	–	1290(112)	1140(254)	–	16.5	–	–	<0.59
J075613.6-383935	119.05686	-38.65975	115(9)	–	171(1)	40(3)	1.08	12.0	K V	–	<0.30
J075851.5-182058	119.71462	-18.34996	66(9)	–	124(0)	12(2)	1.20	11.7	K V	–	<0.52
J075938.0+174430	119.90842	17.74160	44(8)	–	1084(54)	617(123)	1.37	11.6	K III	–	<0.77
J080155.5-485844	120.48104	-48.97907	52(5)	–	324(2)	66(6)	1.21	13.3	K V	–	<0.64
J080648.3-290500	121.70111	-29.08340	47(6)	–	68(0)	3(0)	2.80	14.7	M V	–	<0.72
J080758.7-383216	121.99450	-38.53762	107(9)	–	73(0)	7(1)	1.56	11.7	K V	–	<0.31
J080847.8-383754	122.19943	-38.63138	159(11)	–	56(0)	6(0)	1.65	10.8	K V	–	<0.21
J080944.7-584546	122.43714	-58.76247	43(4)	–	133(1)	9(1)	2.63	14.6	M V	–	<0.78
J081506.8-460855	123.77823	-46.14845	41(5)	–	183(1)	16(2)	0.92	11.5	G V	–	<0.83
J081657.4-052510	124.23914	-5.41930	42(7)	–	230(2)	27(5)	1.09	7.5	G III	–	<0.80
J081722.3-451116	124.34340	-45.18812	48(6)	–	89(2)	5(1)	0.66	8.6	F V	–	<0.70
J081726.1-451116	124.35829	-45.18775	53(6)	–	98(0)	6(1)	1.44	12.0	K V	–	<0.64
J081753.7-410958	124.47413	-41.16589	46(5)	–	140(1)	11(1)	1.52	12.3	K V	–	<0.74
J082244.7-431923	125.68715	-43.32280	51(8)	–	1255(74)	959(195)	1.48	16.4	K V	–	<0.66
J082441.3-685952	126.17298	-68.99837	40(3)	–	458(4)	101(7)	0.99	11.8	G III	–	<0.85
J082811.7-474024	127.04878	-47.67346	55(6)	–	180(1)	21(2)	0.37	8.7	A III	–	<0.62
J083606.6-561851	129.02766	-56.31407	51(5)	–	168(1)	17(2)	0.91	11.1	G V	–	<0.66
J083919.1-070852	129.82951	-7.14831	61(9)	–	182(1)	24(4)	1.42	12.9	K V	–	<0.55
J084223.3-790402	130.59830	-79.06738	51(3)	–	99(0)	6(0)	2.07	11.9	M V	–	<0.67
J084257.2-024148	130.73824	-2.69669	43(7)	–	142(9)	10(2)	0.63	8.6	K III	–	<0.79
J084542.5-354434	131.42735	-35.74319	55(6)	–	173(1)	20(2)	1.07	11.3	K V	–	<0.61
J084621.5-335407	131.58991	-33.90192	47(6)	–	172(1)	17(2)	1.18	6.9	K III	–	<0.72
J084955.6-363658	132.48115	-36.61600	48(6)	–	42(0)	1(0)	0.65	7.0	F V	–	<0.70
J085417.9-730412	133.57400	-73.06990	45(3)	–	644(9)	224(15)	1.43	9.6	K III	–	<0.75
J085650.3-473449	134.20981	-47.58047	347(15)	–	178(1)	132(6)	1.49	10.1	K III	–	<0.10
J090014.7-574439	135.06070	-57.74424	68(5)	–	61(2)	3(0)	2.21	12.4	M V	–	<0.50
J090327.8-302224	135.86621	-30.37365	56(7)	–	476(8)	152(19)	1.18	11.0	K III	–	<0.60
J092428.3+180207	141.11760	18.03533	57(8)	–	81(0)	5(1)	2.50	14.4	M V	–	<0.59
J093113.1-570203	142.80523	-57.03435	374(12)	–	64(2)	18(1)	1.64	2.4	K III	–	<0.09
J093920.7-611940	144.83717	-61.32796	43(4)	–	65(1)	2(0)	-0.08	4.4	B III	–	<0.80
J094125.5-571521	145.35667	-57.25605	66(5)	–	128(0)	13(1)	0.73	9.6	F V	–	<0.52
J094951.3-361607	147.46385	-36.26844	45(7)	–	220(2)	26(4)	1.16	6.1	K III	–	<0.75
J095015.2-603455	147.56353	-60.58174	73(5)	–	478(6)	199(15)	1.31	10.5	K III	–	<0.47
J095141.4-691607	147.92274	-69.26883	43(3)	–	408(5)	86(7)	1.07	9.6	F III	–	<0.78
J100701.6+041023	151.75728	4.17350	44(7)	–	127(6)	8(2)	2.16	12.7	K V	–	<0.78
J101208.9-312446	153.03732	-31.41262	42(7)	–	49(0)	1(0)	3.07	12.7	M V	–	<0.81
J101939.2-305945	154.91343	-30.99562	54(7)	–	304(5)	59(8)	1.07	7.2	G III	–	<0.63
J101946.0-713316	154.94172	-71.55465	45(3)	–	109(3)	7(1)	0.79	9.3	G V	–	<0.75
J102012.7-600809	155.05308	-60.13564	41(4)	–	58(0)	2(0)	2.52	12.8	K V	–	<0.82
J102143.6-621431	155.43184	-62.24247	41(4)	–	152(1)	11(1)	0.97	11.2	G V	–	<0.82
J102208.9-551840	155.53683	-55.31111	41(5)	–	142(1)	10(1)	2.50	14.5	M V	–	<0.83
J102516.4+110603	156.31807	11.10127	144(13)	–	163(1)	46(4)	0.94	10.4	G III	–	<0.24
J102629.6-615958	156.62324	-61.99939	85(5)	–	136(1)	19(1)	0.98	10.9	G V	–	<0.40
J102817.9-523340	157.07386	-52.56089	63(6)	–	33(0)	1(0)	1.04	8.4	K V	–	<0.53
J102932.6-634915	157.38631	-63.82094	50(4)	–	148(1)	13(1)	1.07	11.2	K V	–	<0.68
J103201.2-614107	158.00594	-61.68529	40(4)	–	115(6)	6(1)	0.03	3.1	B III	–	<0.85
J103233.5-443708	158.13996	-44.61860	50(6)	–	114(0)	8(1)	1.06	5.7	G III	–	<0.68
J103237.2+145747	158.15493	14.96365	76(10)	–	559(14)	285(39)	1.28	11.9	K III	–	<0.44
J103312.6-810203	158.30367	-81.03451	130(6)	19(9)	426(4)	281(14)	1.37	11.6	K III	–	0.15
J103527.8-783629	158.86628	-78.60774	71(5)	–	114(4)	11(1)	1.80	3.3	K III	–	<0.48
J103956.0-635928	159.98304	-63.99165	46(4)	–	150(1)	12(1)	1.19	11.8	K V	–	<0.74
J104546.7-605743	161.44424	-60.96191	40(4)	–	186(1)	17(2)	1.39	12.3	K V	–	<0.85
J104953.6-645002	162.47262	-64.83371	63(4)	–	131(7)	13(2)	2.49	14.3	M V	–	<0.53
J105151.4-054718	162.96491	-5.78871	52(8)	–	121(1)	9(1)	0.72	9.1	F V	–	<0.64
J105520.7-565441	163.83689	-56.91175	77(6)	–	196(11)	36(5)	1.72	12.9	K V	–	<0.44
J105611.8-265330	164.04973	-26.89169	64(7)	–	502(24)	193(29)	0.89	10.4	G III	–	<0.53
J110017.1-163248	165.07118	-16.54610	55(7)	–	103(1)	7(1)	2.92	15.9	M V	–	<0.62
J110152.3-613620	165.46840	-61.60617	58(5)	–	730(15)	372(33)	1.41	10.1	K III	–	<0.58

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J110158.4+200202	165.49331	20.03375	55(8)	–	97(1)	6(1)	2.66	15.0	M V	–	<0.61
J110241.5-502544	165.67367	-50.42938	45(5)	–	161(1)	14(2)	0.57	8.8	F III	–	<0.75
J110338.6-203756	165.91144	-20.63257	102(10)	–	99(1)	12(1)	2.87	16.0	M V	–	<0.33
J110707.5-552720	166.78148	-55.45575	41(4)	–	1084(43)	581(77)	1.18	10.2	K III	–	<0.82
J111025.4-284750	167.60569	-28.79781	58(7)	–	169(1)	20(2)	1.50	12.6	K V	–	<0.58
J111101.2-421708	167.75562	-42.28527	46(5)	–	125(0)	9(1)	0.84	10.2	G V	–	<0.74
J111605.4+250116	169.02284	25.02099	54(8)	–	671(23)	291(49)	1.33	12.8	K III	–	<0.63
J111757.1-444213	169.48763	-44.70357	71(6)	–	176(2)	26(2)	2.75	16.1	K V	–	<0.56
J111828.6+330540	169.61960	33.09442	145(12)	–	70(3)	9(1)	1.55	3.0	K III	–	<0.24
J112138.4+310010	170.41032	31.00292	100(11)	–	338(7)	137(17)	1.33	11.2	K III	–	<0.34
J112626.3-680056	171.61088	-68.01569	152(7)	–	71(0)	9(0)	1.28	10.5	K V	–	<0.22
J113458.7-333020	173.74503	-33.50557	54(6)	–	441(7)	126(15)	1.29	9.0	G III	–	<0.63
J113546.6-630111	173.94500	-63.01987	62(4)	212(28)	144(7)	15(2)	3.72	3.0	B III	–	3.45
J113634.5-335411	174.14418	-33.90333	154(10)	–	46(0)	4(0)	3.70	16.1	M V	–	<0.22
J113736.3-532211	174.40076	-53.36974	56(5)	197(28)	76(0)	4(0)	0.74	8.7	G V	–	3.50
J114004.5-320039	175.01922	-32.01131	44(6)	–	349(5)	64(9)	0.93	11.8	G V	–	<0.76
J114142.1-023254	175.42591	-2.54821	41(6)	189(23)	255(2)	32(5)	1.62	14.4	K V	–	4.64
J114232.7-665104	175.63663	-66.85090	65(5)	–	138(1)	15(1)	0.98	10.7	G V	–	<0.52
J115445.8-570624	178.69125	-57.10645	47(4)	–	105(0)	6(1)	2.00	12.3	K V	–	<0.73
J115542.8-563731	178.92883	-56.62548	116(7)	–	100(1)	14(1)	1.69	11.2	M V	–	<0.29
J115630.0-691819	179.12564	-69.30522	46(4)	–	333(3)	61(5)	1.35	11.1	K III	–	<0.74
J115642.2-802841	179.17551	-80.47833	41(4)	–	437(4)	93(9)	1.79	10.2	K III	–	<0.84
J120437.2-693121	181.15435	-69.52287	50(4)	–	91(0)	5(0)	1.42	11.5	K V	–	<0.69
J120824.7-244344	182.10387	-24.72905	151(10)	1355(66)	15(0)	1(0)	0.48	3.9	F III	–	8.97
J121101.7+291826	182.75687	29.30732	42(7)	–	45(0)	1(0)	2.77	13.6	M V	–	<0.80
J121321.0-644858	183.33709	-64.81656	41(4)	–	81(0)	3(0)	1.72	11.5	K V	–	<0.83
J121357.0-625513	183.48716	-62.92030	41(4)	164(30)	105(0)	5(1)	1.45	10.8	K V	61	4.05
J121508.7-584456	183.78602	-58.74897	133(7)	–	86(7)	12(2)	1.77	2.7	B III	–	<0.25
J121929.1+003038	184.87151	0.51069	212(14)	32(13)	516(17)	674(63)	1.14	11.2	K III	–	0.15
J122035.0+264839	185.14598	26.81046	148(12)	23(10)	30(0)	2(0)	2.78	13.5	M V	–	0.16
J122350.1-652057	185.95898	-65.34970	68(5)	–	744(20)	448(41)	1.40	9.4	K III	–	<0.50
J122511.3-722705	186.29584	-72.45108	113(6)	–	119(7)	19(3)	2.39	12.0	M V	–	<0.30
J122544.5-465308	186.43567	-46.88613	79(6)	–	135(1)	17(1)	1.07	11.8	G V	–	<0.43
J122646.2-605332	186.69187	-60.89186	63(5)	–	420(6)	132(11)	0.31	9.1	B III	–	<0.54
J123112.6-615432	187.80232	-61.90879	70(5)	–	108(0)	10(1)	0.68	7.9	F III	–	<0.48
J123643.9-631046	189.18246	-63.17933	96(6)	–	96(0)	11(1)	1.17	10.3	K V	–	<0.36
J124719.6-675115	191.83119	-67.85400	54(4)	–	88(0)	5(0)	1.42	11.0	K V	201	<0.63
J124924.2-591311	192.35131	-59.21986	42(4)	–	114(0)	7(1)	1.94	12.4	K V	–	<0.80
J125639.1-613356	194.16284	-61.56556	43(4)	–	127(1)	8(1)	1.34	11.8	K V	–	<0.78
J130038.0-554726	195.15803	-55.79023	48(5)	–	138(1)	11(1)	1.74	12.6	K V	–	<0.71
J130226.7-520050	195.61194	-52.01415	85(6)	–	101(1)	10(1)	2.33	12.1	M V	–	<0.40
J130351.0-582055	195.96194	-58.34848	40(4)	–	118(1)	7(1)	1.45	11.3	K V	–	<0.84
J130649.7-620641	196.70699	-62.11125	165(9)	–	105(0)	22(1)	0.68	8.6	F III	–	<0.20
J130804.2-850329	197.01525	-85.05807	41(4)	–	194(1)	18(2)	1.03	11.7	G V	–	<0.82
J130952.0-541945	197.46698	-54.32897	80(6)	–	111(0)	12(1)	1.32	11.1	K V	–	<0.42
J131217.6-550827	198.07325	-55.14063	77(6)	–	101(0)	9(1)	1.58	11.3	K V	–	<0.44
J131235.8+184505	198.14929	18.75180	50(6)	–	144(1)	12(2)	1.03	6.3	G III	–	<0.68
J131400.5-190157	198.50177	-19.03317	53(6)	–	57(3)	2(0)	2.22	12.1	M V	–	<0.63
J131638.3-451956	199.15935	-45.33215	48(5)	–	49(2)	1(0)	–	12.4	–	–	<0.71
J131721.2-725857	199.33705	-72.98242	73(6)	–	109(1)	10(1)	1.07	10.7	G V	–	<0.47
J132045.4-461138	200.18893	-46.19389	47(5)	–	126(1)	9(1)	1.63	11.8	K V	–	<0.73
J132156.5+221838	200.48535	22.31065	49(6)	–	64(0)	2(0)	0.72	8.1	F III	–	<0.69
J132227.5-601733	200.61519	-60.29282	185(8)	–	129(1)	37(2)	0.87	9.3	G III	–	<0.19
J132442.7-593358	201.17785	-59.56608	96(6)	–	138(5)	22(2)	1.08	10.2	G III	–	<0.36
J132512.1-645622	201.30011	-64.93916	78(6)	–	94(0)	8(1)	1.27	10.7	K V	–	<0.43
J132642.9-630307	201.67902	-63.05204	43(3)	–	110(1)	6(1)	2.75	13.5	K V	–	<0.79
J132651.2-494625	201.71388	-49.77419	62(6)	–	131(1)	13(1)	0.85	10.1	G V	–	<0.55
J132657.2-295600	201.73865	-29.93383	42(5)	–	62(0)	2(0)	2.13	12.6	K V	–	<0.80
J132712.1-593814	201.80060	-59.63735	99(6)	–	150(1)	27(2)	0.70	9.5	F III	–	<0.34
J132956.5-130347	202.48529	-13.06353	46(6)	–	324(5)	58(7)	0.99	11.8	G III	–	<0.74

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J133033.5-592306	202.63931	-59.38509	42(4)	–	61(3)	2(0)	2.40	12.4	M V	–	<0.80
J133344.2-635935	203.43345	-63.99300	54(5)	–	111(0)	8(1)	1.37	11.0	K V	71	<0.63
J133419.8-611526	203.58171	-61.25726	45(3)	–	618(11)	204(18)	1.48	11.5	K III	–	<0.75
J134055.8-424451	205.23258	-42.74748	60(6)	–	138(13)	14(3)	2.05	12.4	K V	–	<0.56
J134404.0-470515	206.01705	-47.08737	175(9)	–	131(2)	36(2)	0.72	9.0	F III	–	<0.19
J134424.4-470635	206.10163	-47.10953	127(8)	–	140(2)	30(2)	1.21	10.2	K III	–	<0.26
J134556.1-522226	206.48308	-52.37384	61(6)	275(48)	119(1)	10(1)	1.29	10.8	K V	–	4.52
J134812.2-421106	207.05095	-42.18477	57(6)	–	346(8)	82(9)	0.09	7.9	B III	–	<0.59
J134930.1-414115	207.37600	-41.68780	44(5)	–	99(5)	5(1)	2.83	3.3	B III	–	<0.78
J135147.4-532727	207.94700	-53.45750	47(4)	–	127(3)	9(1)	2.15	12.4	M V	–	<0.72
J135230.7-515338	208.12797	-51.89360	42(5)	–	122(1)	7(1)	1.79	12.3	K V	344	<0.80
J135512.9+105350	208.80364	10.89705	52(6)	–	91(2)	5(1)	2.50	13.8	M V	–	<0.65
J135546.5+035625	208.94435	3.94065	59(6)	–	349(4)	85(10)	1.12	12.2	K III	–	<0.58
J135724.2-440120	209.35068	-44.02263	204(10)	–	122(1)	36(2)	2.29	13.1	M V	–	<0.17
J135907.5-450407	209.78176	-45.06917	54(6)	–	144(2)	13(1)	1.75	12.5	K V	–	<0.63
J135913.8-515239	209.80740	-51.87756	181(9)	–	120(1)	31(2)	0.97	9.5	G III	–	<0.19
J140002.2-505708	210.00889	-50.95248	45(4)	–	152(1)	12(1)	1.15	11.9	K V	–	<0.75
J140240.5-205309	210.66908	-20.88615	143(9)	39(14)	528(19)	477(47)	1.30	10.2	K III	–	0.27
J140334.8-501041	210.89530	-50.17794	181(9)	–	97(1)	20(1)	1.28	10.1	K V	208	<0.19
J140505.3-480252	211.27182	-48.04787	65(6)	–	141(1)	16(1)	1.99	12.3	K V	–	<0.52
J140557.0-253048	211.48767	-25.51337	54(6)	–	96(2)	6(1)	2.07	12.6	K V	–	<0.63
J140627.9-450033	211.61656	-45.00893	47(5)	–	587(20)	193(26)	0.94	11.1	G III	–	<0.72
J140733.5-541550	211.88938	-54.26395	443(13)	60(16)	244(4)	314(14)	1.47	8.3	G III	–	0.14
J140957.9-423321	212.49093	-42.55605	49(6)	–	142(1)	12(1)	1.35	11.5	K V	–	<0.69
J141151.6-453545	212.96542	-45.59588	59(6)	–	133(1)	13(1)	1.20	12.0	K V	–	<0.57
J141235.9-383046	213.15041	-38.51290	95(8)	–	117(1)	16(1)	1.33	10.8	K V	–	<0.36
J141247.0-383121	213.19533	-38.52293	45(5)	–	111(2)	7(1)	1.42	11.2	K V	–	<0.75
J141455.5-811232	213.72817	-81.20898	55(5)	–	147(1)	14(1)	1.31	12.0	K V	–	<0.62
J141732.6-401856	214.38590	-40.31564	94(8)	–	98(1)	11(1)	3.29	15.5	K V	–	<0.36
J141915.0-110253	214.81256	-11.04850	86(7)	–	114(1)	13(1)	2.87	15.6	M V	–	<0.40
J141930.9-162646	214.87934	-16.44633	238(12)	69(16)	216(2)	132(7)	1.10	10.1	G III	–	0.29
J142212.9+011513	215.55360	1.25362	104(8)	–	96(1)	12(1)	2.94	15.1	K V	–	<0.32
J142544.5-365247	216.43516	-36.87959	78(7)	–	155(1)	23(2)	0.85	9.4	G III	–	<0.43
J142801.7-292630	217.00768	-29.44192	51(6)	–	108(1)	7(1)	1.66	11.9	K V	–	<0.66
J142806.3-452350	217.02622	-45.39693	87(5)	–	170(4)	30(2)	2.20	14.2	K V	–	<0.39
J143009.9-435150	217.54140	-43.86399	297(10)	–	124(2)	55(3)	0.21	6.9	A V	–	<0.11
J143121.1-350750	217.83806	-35.13074	85(7)	–	134(1)	18(2)	1.26	11.4	K V	–	<0.40
J143325.8-343238	218.35725	-34.54394	219(11)	–	96(0)	24(1)	1.09	9.9	G V	–	<0.15
J143735.8-193941	219.39923	-19.66118	56(6)	–	233(2)	36(4)	1.13	10.2	K III	–	<0.61
J143753.3-343918	219.47164	-34.65506	94(7)	–	30(0)	1(0)	2.96	12.7	K V	–	<0.36
J143854.3-431021	219.72655	-43.17295	174(11)	–	110(2)	25(2)	1.49	10.8	K V	–	<0.19
J143900.9-304201	219.75392	-30.70057	94(8)	–	112(1)	14(1)	1.23	10.5	K V	–	<0.36
J144639.3-733931	221.66188	-73.65860	100(7)	–	160(1)	31(2)	1.42	12.0	K V	291	<0.34
J144742.5-270946	221.92727	-27.16298	49(5)	–	100(2)	6(1)	1.57	11.5	K V	–	<0.69
J144744.7-260514	221.93688	-26.08754	139(9)	–	91(2)	14(1)	1.08	4.9	G III	–	<0.25
J144747.7+010958	221.94888	1.16640	45(5)	–	112(1)	7(1)	0.79	9.6	G V	–	<0.75
J144752.1-790241	221.96535	-79.04482	79(6)	–	132(6)	16(2)	1.54	3.2	K III	–	<0.43
J144942.9-142016	222.42895	-14.33763	41(5)	–	73(1)	3(0)	2.50	13.2	M V	–	<0.82
J145019.6-735201	222.58089	-73.86688	75(6)	–	109(0)	11(1)	1.57	12.4	K V	–	<0.45
J145034.1-174050	222.64155	-17.68072	73(7)	–	271(7)	64(7)	1.12	10.3	K III	–	<0.47
J145343.8-142642	223.43299	-14.44513	126(9)	–	147(3)	33(3)	3.05	16.7	K V	–	<0.27
J145457.7-243541	223.74050	-24.59514	44(6)	–	249(3)	32(5)	1.13	10.9	K III	–	<0.78
J145516.3-273242	223.81824	-27.54507	44(5)	–	94(1)	5(1)	1.93	12.9	K V	–	<0.77
J145704.3-430019	224.26791	-43.00533	43(6)	–	528(19)	143(22)	0.91	10.9	G III	–	<0.79
J145819.8-554910	224.58281	-55.81977	51(6)	–	1581(97)	1510(262)	1.54	12.4	K III	–	<0.67
J145919.9-432820	224.83246	-43.47271	62(7)	–	69(0)	4(0)	1.53	11.8	K V	–	<0.55
J145945.9-551736	224.94082	-55.29397	46(6)	–	279(4)	42(6)	1.51	11.1	K III	–	<0.75
J150023.8-190211	225.09922	-19.03609	41(5)	–	387(6)	73(10)	0.91	10.7	G III	–	<0.83
J150114.4-422131	225.30973	-42.35862	46(6)	–	135(1)	10(1)	1.53	11.9	K V	–	<0.73
J150213.1-362509	225.55509	-36.41888	51(5)	–	129(1)	10(1)	1.47	11.8	K V	666	<0.66

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J150507.2-470305	226.27999	-47.05114	73(8)	323(30)	146(11)	18(3)	-0.60	4.6	B III	–	4.44
J150753.6-125945	226.97333	-12.99622	77(7)	–	132(1)	16(2)	2.51	15.5	M V	–	<0.52
J151341.1-390707	228.42084	-39.11866	64(8)	–	201(4)	31(4)	1.16	10.4	K III	–	<0.52
J151411.2-253245	228.54709	-25.54561	48(6)	–	134(10)	10(2)	1.48	11.9	K V	–	<0.71
J151854.4-684047	229.72664	-68.67968	122(8)	–	60(3)	5(1)	4.68	2.7	A III	–	<0.28
J152039.7-572841	230.16493	-57.47797	66(6)	–	797(26)	503(58)	1.25	11.0	K III	–	<0.51
J152304.9-362730	230.77086	-36.45831	44(6)	–	87(1)	4(1)	1.75	12.5	K V	–	<0.76
J152517.2-272929	231.32163	-27.49208	98(10)	–	325(4)	124(13)	1.30	10.6	K III	–	<0.35
J152610.9-643833	231.54459	-64.64241	1370(29)	91(17)	76(1)	95(3)	2.42	12.1	M V	–	0.07
J153105.8-403435	232.77399	-40.57648	90(9)	356(31)	63(0)	4(0)	0.97	9.4	K V	–	3.96
J153129.6-302153	232.87342	-30.36478	344(18)	31(11)	149(3)	91(6)	–	14.3	–	–	0.09
J153426.9-591857	233.61235	-59.31560	50(6)	–	165(1)	16(2)	0.83	10.4	G V	–	<0.68
J153508.2-750437	233.78194	-75.07699	64(6)	–	139(0)	15(1)	1.22	11.2	K V	–	<0.52
J153524.0-472349	233.84925	-47.39700	50(6)	–	591(16)	209(27)	0.76	11.3	G III	–	<0.68
J153642.4-120223	234.17726	-12.03980	43(6)	–	84(0)	4(1)	1.99	13.0	K	313	<0.78
J153701.3-280806	234.25596	-28.13506	113(10)	19(9)	62(4)	5(1)	1.56	3.0	K III	–	0.17
J153816.0-322923	234.56716	-32.49000	43(6)	–	216(4)	24(4)	0.94	10.4	G III	–	<0.80
J155322.0-215817	238.34130	-21.97140	50(7)	–	140(1)	12(2)	0.56	8.3	A III	–	<0.67
J155744.4-404929	239.43501	-40.82446	98(8)	–	142(10)	24(4)	1.97	11.8	K V	–	<0.35
J155947.8-355043	239.94954	-35.84572	44(6)	–	32(0)	1(0)	0.85	7.5	G V	–	<0.76
J160156.4-213703	240.48526	-21.61785	44(6)	–	138(1)	10(1)	1.35	10.7	K V	113	<0.77
J160359.0-230906	240.99630	-23.15165	54(6)	–	141(2)	13(2)	2.24	13.1	M V	–	<0.63
J160455.3-722319	241.22979	-72.38889	185(10)	48(19)	595(13)	781(55)	1.32	15.8	K V	–	0.25
J160637.3-210840	241.65573	-21.14481	83(8)	25(9)	125(1)	16(2)	2.51	13.6	M V	–	0.3
J160725.5-144528	241.85685	-14.75770	92(9)	–	333(26)	122(23)	1.37	8.4	K III	–	<0.37
J160901.9-390512	242.25765	-39.08689	1070(28)	–	162(1)	336(11)	2.86	13.6	M V	–	<0.03
J161201.9-464622	243.00801	-46.77273	67(7)	–	394(7)	124(14)	0.96	12.3	G III	–	<0.51
J161246.7-221332	243.19501	-22.22559	96(9)	–	132(4)	20(2)	1.52	10.8	K V	–	<0.36
J161406.6-450133	243.52727	-45.02624	43(6)	–	186(2)	18(2)	1.50	12.0	K V	–	<0.78
J161413.8-193936	243.55754	-19.66016	191(12)	–	159(2)	58(4)	1.13	9.3	K III	–	<0.18
J162007.3-423852	245.02994	-42.64771	47(6)	–	168(5)	16(2)	2.45	16.1	M V	–	<0.72
J162335.6-463147	245.89829	-46.52942	206(12)	43(13)	805(34)	1590(165)	1.60	9.4	K III	–	0.21
J162625.5-841100	246.60303	-84.18339	45(5)	–	316(3)	54(6)	0.87	10.6	G III	–	<0.75
J162719.4-244142	246.83124	-24.69467	1240(31)	90(17)	112(5)	186(19)	2.37	12.2	M V	–	0.08
J162740.2-242205	246.91782	-24.36793	259(14)	66(15)	130(1)	52(3)	1.81	11.0	K III	–	0.25
J163104.3-240432	247.76813	-24.07603	55(7)	–	129(1)	11(1)	1.99	11.5	K V	–	<0.62
J163346.3-675116	248.44411	-67.85472	52(6)	–	218(3)	30(3)	0.95	11.6	G V	–	<0.64
J163354.1-435502	248.47475	-43.91782	48(6)	–	261(4)	39(5)	1.50	11.0	K III	–	<0.70
J163425.2-404409	248.60487	-40.73636	55(7)	–	898(56)	528(92)	1.69	12.5	K III	–	<0.62
J163528.8-480601	248.86969	-48.10050	935(26)	65(16)	1140(53)	14400(1400)	1.53	9.6	K III	–	0.07
J163622.4-351518	249.09371	-35.25529	55(7)	–	80(3)	4(1)	1.82	3.4	K III	–	<0.61
J163852.7-605926	249.71958	-60.99055	51(6)	–	179(4)	20(3)	-0.08	6.1	B III	–	<0.66
J164042.2-395257	250.17626	-39.88254	44(6)	–	219(2)	25(4)	1.16	7.9	G III	–	<0.76
J164130.8-463047	250.37880	-46.51361	45(6)	–	559(19)	166(25)	1.23	11.3	G III	–	<0.76
J164141.0-813640	250.41891	-81.61099	52(5)	–	140(1)	12(1)	1.17	11.1	K V	–	<0.65
J164806.9-364813	252.02922	-36.80405	41(6)	–	146(1)	10(2)	0.78	9.5	F III	–	<0.83
J165211.4-484638	253.04793	-48.77765	40(6)	–	927(27)	413(64)	1.54	13.2	K III	–	<0.84
J165403.6-603800	253.51536	-60.63344	54(6)	–	172(1)	19(2)	1.11	11.4	K V	–	<0.63
J165410.0-414931	253.54192	-41.82505	117(10)	–	1698(168)	4020(869)	0.30	6.0	A III	–	<0.29
J165610.3-541342	254.04347	-54.22868	43(6)	–	37(0)	1(0)	2.31	12.1	K V	–	<0.78
J165837.0-555925	254.65492	-55.99029	375(16)	–	141(13)	90(17)	1.54	2.4	K III	–	<0.09
J165854.5-281453	254.72687	-28.24828	52(7)	–	114(1)	8(1)	2.57	14.3	M V	–	<0.65
J170341.2-470940	255.92131	-47.16122	47(6)	–	164(2)	15(2)	1.05	11.4	K V	–	<0.72
J170404.9-430538	256.02067	-43.09390	57(7)	–	964(80)	633(130)	1.17	16.4	K V	–	<0.59
J170444.5-704821	256.18620	-70.80579	42(5)	–	283(2)	40(5)	1.30	11.4	K III	–	<0.80
J170712.2-271336	256.80098	-27.22716	43(6)	–	158(2)	13(2)	1.55	11.6	K V	–	<0.79
J170900.7-425623	257.25275	-42.93979	63(7)	–	73(0)	4(0)	1.24	10.8	K V	–	<0.53
J171019.9-392031	257.58362	-39.34232	90(9)	25(12)	146(2)	23(2)	–	14.8	–	–	0.28
J171106.7-432416	257.77842	-43.40469	57(7)	–	38(0)	1(0)	2.38	12.1	K V	134	<0.60
J171319.5-874228	258.32820	-87.70804	45(4)	–	590(10)	186(19)	1.36	9.8	K III	–	<0.75

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J171705.0-312931	259.27077	-31.49202	73(8)	–	136(1)	16(2)	2.80	14.9	K V	–	<0.47
J171708.5-540235	259.28506	-54.04294	43(6)	–	281(14)	41(7)	1.03	11.0	K III	–	<0.79
J172138.6-684948	260.41089	-68.83075	49(6)	–	432(5)	109(14)	1.13	10.2	K III	–	<0.69
J172613.2-483526	261.55545	-48.59050	42(6)	–	45(0)	1(0)	1.03	8.7	K V	–	<0.80
J172920.6-765812	262.33557	-76.97073	57(6)	–	191(1)	25(3)	0.95	11.1	G V	–	<0.60
J173631.0-640337	264.12813	-64.06063	42(6)	–	272(3)	38(5)	1.14	12.2	K V	–	<0.80
J173738.4-555435	264.40981	-55.90984	68(8)	–	105(5)	9(1)	2.76	12.9	K V	–	<0.50
J173904.7-443252	264.77018	-44.54776	108(11)	–	108(2)	15(2)	2.79	13.8	M V	–	<0.31
J174347.3-314025	265.94687	-31.67368	188(13)	–	574(39)	740(113)	1.48	9.0	G III	–	<0.18
J174951.4-370236	267.46473	-37.04322	194(14)	–	45(1)	5(0)	1.28	2.7	K III	–	<0.18
J180133.3-390115	270.38851	-39.02113	66(8)	–	143(2)	16(2)	1.33	11.4	K V	–	<0.52
J180229.5-581705	270.62255	-58.28527	86(8)	–	546(12)	305(32)	1.47	10.2	K III	–	<0.40
J180906.9-761325	272.27902	-76.22395	45(5)	–	27(0)	1(0)	3.43	13.3	M V	–	<0.75
J180908.6-551342	272.28661	-55.22850	112(11)	–	342(5)	157(17)	1.31	10.3	K III	–	<0.30
J181333.5-353829	273.39009	-35.64119	58(8)	–	1633(159)	1860(452)	–	15.0	–	–	<0.58
J181909.8-515357	274.79024	-51.89908	196(15)	–	411(6)	396(32)	1.49	12.0	K III	–	<0.17
J182839.8-415507	277.16509	-41.91915	57(9)	–	39(0)	1(0)	2.79	14.0	M V	–	<0.60
J183918.9-512548	279.82889	-51.43011	41(7)	–	157(1)	12(2)	0.94	11.3	K V	–	<0.83
J183949.9-490303	279.95812	-49.05143	52(8)	–	558(13)	193(31)	1.56	9.1	K III	–	<0.65
J185050.5-392411	282.71052	-39.40301	43(8)	–	222(3)	25(5)	1.22	12.5	K V	–	<0.79
J185604.7-365936	284.01971	-36.99374	89(11)	–	254(4)	69(9)	1.39	13.1	K V	–	<0.38
J185639.3-510328	284.16359	-51.05811	75(10)	–	174(1)	27(3)	0.92	10.6	G V	–	<0.45
J190214.5-675514	285.56042	-67.92076	41(6)	–	393(8)	76(12)	0.95	11.8	G III	–	<0.82
J191001.6-392027	287.50734	-39.34096	51(8)	–	134(6)	11(2)	1.32	3.6	K III	–	<0.66
J191418.0-654214	288.57535	-65.70386	49(7)	–	144(1)	12(2)	1.25	12.0	K V	–	<0.69
J192149.4-794737	290.45631	-79.79393	58(6)	–	428(5)	127(14)	1.44	11.0	K III	–	<0.58
J193409.9-680125	293.54121	-68.02361	67(8)	–	148(1)	17(2)	1.20	11.3	K V	–	<0.51
J193918.7-595130	294.82840	-59.85837	72(9)	–	101(0)	9(1)	0.67	8.7	F V	–	<0.47
J194232.8-412955	295.63749	-41.49836	53(8)	–	132(12)	11(3)	2.32	13.5	K V	–	<0.63
J195230.2-601539	298.12632	-60.26117	60(8)	–	160(1)	18(2)	1.20	11.9	K V	–	<0.56
J195355.8-413205	298.48351	-41.53506	74(9)	–	142(1)	18(2)	1.13	11.3	K V	–	<0.46
J201843.8-615425	304.68195	-61.90691	55(7)	–	109(1)	8(1)	0.01	6.6	A III	–	<0.62
J203734.0-471729	309.39212	-47.29122	182(14)	–	29(0)	2(0)	1.17	2.7	K III	–	<0.19
J204020.8-634723	310.08674	-63.78996	46(7)	–	323(4)	58(8)	1.48	11.3	K III	–	<0.73
J204200.7-455849	310.50357	-45.97994	181(15)	–	51(0)	6(0)	1.14	9.7	K V	–	<0.19
J205448.6-582714	313.70266	-58.45425	66(8)	–	155(7)	19(3)	1.36	3.2	K III	–	<0.52
J210722.7-705613	316.84402	-70.93725	66(7)	–	48(0)	2(0)	2.65	12.6	M V	–	<0.52
J212756.1-670238	321.98524	-67.04417	69(8)	–	104(0)	9(1)	1.64	12.3	K V	–	<0.49
J213230.7-592353	323.12922	-59.39826	91(9)	–	430(13)	201(24)	1.82	16.5	K V	–	<0.37
J213708.9-603604	324.28720	-60.60196	46(7)	153(29)	44(0)	1(0)	2.67	12.5	M V	–	3.36
J215534.3-700406	328.89321	-70.06848	81(8)	–	100(1)	10(1)	0.36	6.6	A III	–	<0.41
J220744.1-773841	331.93368	-77.64476	43(5)	–	235(1)	28(4)	1.23	12.2	K V	–	<0.80
J220842.7-491024	332.17793	-49.17334	96(10)	–	421(7)	204(22)	1.32	11.6	K III	–	<0.36
J222311.5-623551	335.79735	-62.59790	79(8)	527(35)	232(1)	51(6)	1.45	11.4	K III	–	6.65
J224222.0-745015	340.58986	-74.83786	45(6)	–	77(0)	3(0)	2.05	12.2	K V	–	<0.75
J235856.5-833943	359.73840	-83.66199	41(5)	–	55(0)	2(0)	1.87	11.3	K V	–	<0.82
WR											
J104410.2-594310	161.04323	-59.71974	488(14)	–	2099(145)	25600(3610)	0.99	7.8	O III	–	<0.07
XRB											
J111821.2-543729	169.58856	-54.62475	60(5)	–	277(15)	55(8)	2.77	18.5	–	–	<0.57
J121314.8-645231	183.31157	-64.87513	1630(31)	–	4244(331)	350000(55100)	1.05	14.0	B III	–	<0.02
J130116.8-613605	195.32120	-61.60184	86(6)	–	2129(150)	4660(737)	2.44	12.6	B III	–	<0.39
YSO											
J040654.3-011542	61.72607	-1.26167	41(6)	–	152(2)	11(2)	2.62	13.9	M V	–	<0.82
J045012.5+074859	72.55271	7.81644	50(6)	–	134(2)	11(1)	2.96	14.8	K V	–	<0.68
J051356.3+023638	78.48505	2.61064	77(8)	–	174(3)	28(3)	2.99	14.9	K V	–	<0.44
J052042.1-012809	80.17576	-1.46948	92(9)	–	424(16)	198(23)	2.48	15.4	M V	–	<0.36
J052536.9-061026	81.40400	-6.17398	74(8)	–	228(3)	46(5)	2.58	14.9	M V	–	<0.46

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J053223.3-071238	83.09756	-7.21070	73(8)	–	379(7)	125(14)	1.37	12.4	K V	–	<0.47
J053233.8-062647	83.14123	-6.44649	61(7)	–	375(3)	103(12)	1.61	13.4	K V	–	<0.55
J053312.9+001030	83.30453	0.17502	56(7)	–	364(5)	89(11)	1.05	11.9	K V	–	<0.60
J053447.7-071608	83.69897	-7.26929	44(6)	–	392(3)	81(11)	1.56	13.6	K V	–	<0.76
J053521.2-051212	83.83882	-5.20352	112(10)	–	472(10)	299(29)	1.49	10.5	G V	–	<0.30
J053525.9-050837	83.85857	-5.14386	107(10)	–	380(16)	185(23)	2.43	16.3	M V	–	<0.31
J053543.0-042456	83.92964	-4.41548	49(7)	–	402(6)	95(13)	1.61	13.1	K V	–	<0.69
J053547.7-051030	83.94914	-5.17523	65(8)	–	417(5)	135(16)	1.35	11.9	K V	–	<0.52
J053636.3+213934	84.15144	21.65903	226(17)	–	108(2)	31(3)	2.20	12.0	M V	–	<0.15
J053754.5-023929	84.47669	-2.65828	73(8)	–	386(10)	131(15)	1.21	10.8	G V	–	<0.46
J053838.5-023453	84.66038	-2.58197	43(6)	–	413(6)	88(13)	1.53	11.9	K V	–	<0.78
J054324.7+090610	85.85307	9.10232	98(10)	–	464(13)	251(29)	1.57	12.8	K V	–	<0.35
J054416.5+004237	86.06876	0.71032	46(7)	–	389(11)	83(13)	1.61	13.0	K V	111	<0.74
J054535.0-102044	86.39592	-10.34601	49(6)	–	276(3)	44(6)	0.90	11.2	G V	–	<0.69
J061449.5-064437	93.70630	-6.74434	44(7)	–	395(11)	82(14)	2.38	16.4	M V	–	<0.76
J063127.1-071145	97.86313	-7.19607	72(9)	–	216(3)	40(5)	2.63	15.5	M V	–	<0.47
J064040.3+095051	100.16797	9.84742	43(7)	–	669(43)	228(50)	–	16.1	–	–	<0.80
J081852.5-452836	124.71909	-45.47662	43(5)	–	341(8)	59(8)	0.96	11.5	G III	–	<0.80
J085338.7-645948	133.41207	-64.99665	42(3)	–	214(3)	23(2)	2.43	14.4	M V	–	<0.80
J085605.6-431320	134.02326	-43.22286	56(6)	–	313(3)	65(7)	2.20	14.8	M V	–	<0.61
J085950.0-094046	134.95794	-9.67961	41(7)	–	185(4)	17(3)	2.80	17.1	–	35	<0.82
J095119.6-553539	147.83150	-55.59450	49(5)	–	442(21)	115(16)	2.45	15.7	M V	–	<0.69
J102115.5-622606	155.31438	-62.43447	52(4)	–	83(0)	4(0)	3.00	13.6	K V	–	<0.64
J111844.3-533634	169.68424	-53.60950	42(4)	–	133(1)	9(1)	3.05	14.8	K V	–	<0.80
J113712.5-543554	174.30209	-54.59882	44(4)	–	103(0)	6(1)	1.63	11.5	K V	–	<0.76
J114451.8-643854	176.21698	-64.64861	650(15)	68(16)	104(0)	83(2)	1.71	11.4	K V	–	0.10
J115058.5-534348	177.74339	-53.72964	45(5)	–	192(1)	20(2)	1.85	13.5	K V	–	<0.75
J115525.2-690440	178.85585	-69.07806	53(4)	–	110(0)	8(1)	2.64	13.5	M V	–	<0.63
J121101.9-625606	182.75817	-62.93470	49(4)	–	108(1)	7(1)	2.33	12.9	M V	–	<0.69
J121345.4-542332	183.43928	-54.39201	53(5)	–	137(1)	12(1)	1.55	12.1	K V	–	<0.63
J121623.0-642149	184.09522	-64.36347	47(4)	–	131(7)	10(1)	1.72	11.4	K V	–	<0.73
J121704.4-640057	184.26841	-64.01565	51(4)	–	107(0)	7(1)	1.77	11.6	K V	–	<0.67
J121758.1-585557	184.49196	-58.93245	47(4)	–	99(1)	6(1)	2.57	12.6	K V	–	<0.71
J121943.9-740358	184.93146	-74.06594	90(6)	–	101(0)	11(1)	2.08	12.1	M V	–	<0.38
J122027.0-534012	185.11298	-53.66988	45(4)	–	107(1)	6(1)	2.78	13.5	K V	–	<0.75
J122203.3-631712	185.51350	-63.28669	53(5)	–	104(1)	7(1)	3.03	14.4	K V	–	<0.64
J122315.8-631650	185.81605	-63.28063	65(5)	–	113(0)	10(1)	1.95	12.1	M V	–	<0.52
J122332.2-624040	185.88409	-62.67813	82(6)	–	109(0)	12(1)	1.49	11.0	K V	–	<0.41
J122529.9-630005	186.37354	-63.00133	118(7)	–	105(1)	16(1)	3.24	15.2	K V	–	<0.29
J122807.8-630200	187.03252	-63.03329	54(5)	–	104(0)	7(1)	2.47	12.3	M V	–	<0.63
J122900.7-631220	187.25269	-63.20524	127(7)	–	104(0)	16(1)	1.57	10.9	K V	–	<0.26
J123001.1-621827	187.50526	-62.30744	46(4)	–	109(0)	7(1)	1.93	12.1	K V	–	<0.74
J123043.4-582322	187.68066	-58.38966	45(4)	–	112(0)	7(1)	2.44	13.3	M V	–	<0.75
J123333.9-571408	188.39058	-57.23522	133(8)	–	101(0)	16(1)	1.26	10.5	K V	–	<0.25
J123600.5-395215	189.00196	-39.87116	67(6)	–	70(0)	4(0)	2.28	12.0	M V	–	<0.51
J124414.7-690234	191.06028	-69.04328	48(4)	165(31)	76(3)	3(0)	2.32	12.3	M V	–	3.44
J124424.0-585523	191.10020	-58.92274	196(9)	–	111(0)	29(1)	1.27	9.8	K V	–	<0.17
J124541.7-680646	191.42381	-68.11292	110(5)	–	103(0)	14(1)	1.53	11.0	K V	125	<0.30
J124854.9-594948	192.22862	-59.82997	41(4)	–	94(0)	4(0)	2.35	12.7	K V	–	<0.83
J125534.1-605523	193.89134	-60.92310	51(5)	–	101(1)	6(1)	2.79	14.0	M V	–	<0.66
J130830.9-684449	197.12754	-68.74695	41(4)	–	97(0)	5(0)	2.36	12.6	M V	–	<0.83
J131043.1-521301	197.68002	-52.21679	42(4)	–	135(1)	9(1)	2.59	14.1	K V	–	<0.80
J131901.8-610654	199.75769	-61.11500	46(4)	–	108(1)	7(1)	1.67	11.4	K V	14	<0.73
J132450.3-542025	201.20932	-54.34024	268(11)	–	119(1)	46(2)	1.60	11.4	K V	–	<0.13
J132520.0-510405	201.33372	-51.06782	42(5)	–	128(1)	8(1)	1.95	12.6	M V	–	<0.80
J133336.9-631424	203.40348	-63.23996	55(5)	–	137(6)	12(2)	2.37	13.0	K V	–	<0.62
J133521.4-493920	203.83841	-49.65578	57(5)	–	132(1)	12(1)	1.62	11.6	K V	–	<0.59
J133618.5-465737	204.07783	-46.96049	43(5)	–	136(3)	10(1)	2.19	12.7	K V	26	<0.78
J133812.9-570308	204.55399	-57.05235	43(4)	–	103(0)	6(1)	2.19	12.7	K V	–	<0.79
J134810.5-570704	207.04330	-57.11766	62(5)	–	101(0)	8(1)	2.29	12.2	K V	–	<0.54

ID	RA	DEC	eRASS1 Flux	2RXS Flux	Distance	Luminosity	BP-RP	G	Spec-Lum	P	$\frac{F_{2RXS}}{F_{eRASS1}}$
(1eRASS)	(Deg)	(Deg)	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	$10^{-14}(\text{erg s}^{-1} \text{ cm}^{-2})$	(pc)	$10^{29}(\text{erg s}^{-1})$			Classification	(Hours)	
J135631.6-503341	209.13137	-50.56154	44(5)	–	149(3)	12(1)	2.70	14.9	M V	–	<0.78
J140715.6-424228	211.81492	-42.70809	45(5)	–	149(1)	12(1)	2.15	13.6	M V	–	<0.75
J140808.0-410618	212.03431	-41.10528	44(5)	–	145(1)	11(1)	2.28	13.7	M V	–	<0.77
J141516.2-402926	213.81748	-40.49045	67(7)	–	149(1)	18(2)	2.68	14.6	M V	–	<0.50
J142118.0-445444	215.32465	-44.91232	52(6)	–	117(2)	9(1)	2.43	13.5	M V	–	<0.66
J145036.5-165419	222.65233	-16.90559	60(6)	–	86(0)	5(1)	2.19	12.4	K V	–	<0.57
J145327.1-390328	223.36286	-39.05753	111(10)	–	134(4)	24(3)	2.81	13.5	K V	100	<0.30
J150315.4-444959	225.81461	-44.83342	43(6)	–	142(1)	10(2)	2.59	14.4	M V	–	<0.79
J150451.8-321123	226.21582	-32.18964	153(12)	–	119(1)	26(2)	2.91	14.1	K V	–	<0.22
J151002.9-360549	227.51255	-36.09709	44(6)	–	126(1)	8(1)	2.29	13.4	M V	–	<0.76
J152531.4-360826	231.38125	-36.14078	42(6)	–	117(1)	7(1)	1.59	11.7	K V	–	<0.80
J152612.0-173908	231.55029	-17.65274	42(4)	–	107(1)	6(1)	2.46	13.5	M V	–	<0.80
J152618.3-350021	231.57633	-35.00588	59(8)	–	151(4)	16(2)	1.53	11.9	K V	–	<0.58
J152833.6-384458	232.14008	-38.74998	57(7)	–	127(1)	11(1)	2.70	14.4	M V	–	<0.59
J160346.9-224524	240.94557	-22.75697	44(6)	–	131(4)	9(1)	2.43	12.9	M V	–	<0.78
J160455.2-360204	241.22966	-36.03443	73(8)	–	138(1)	17(2)	2.49	14.0	M V	–	<0.46
J160529.4-254335	241.37267	-25.72648	40(6)	–	105(1)	5(1)	1.50	11.6	K V	–	<0.85
J160538.0-203946	241.40894	-20.66315	446(19)	–	137(1)	100(4)	1.82	11.9	M V	40	<0.08
J160700.6-390220	241.75244	-39.03885	59(7)	–	158(1)	18(2)	1.71	12.6	M V	–	<0.58
J160713.7-383923	241.80701	-38.65673	79(8)	–	158(2)	24(2)	1.91	12.1	K V	58	<0.42
J160854.3-390607	242.22610	-39.10171	106(9)	–	155(1)	30(3)	1.27	10.4	K V	48	<0.32
J161842.3-212705	244.67681	-21.45143	46(6)	–	136(1)	10(1)	2.38	13.3	M V	103	<0.74
J161902.1-213811	244.75890	-21.63616	195(12)	–	129(1)	39(3)	2.94	14.5	M V	212	<0.18
J161931.5-251812	244.88074	-25.30366	181(12)	–	156(1)	53(4)	1.99	12.5	K V	–	<0.19
J162356.3-610846	245.98363	-61.14611	99(8)	–	110(0)	14(1)	1.63	12.1	K V	–	<0.34
J163405.8-265845	248.52435	-26.97905	146(11)	41(14)	137(3)	32(3)	1.73	11.8	K V	–	0.28
J164656.0-324253	251.73343	-32.71511	46(6)	–	138(1)	10(1)	1.71	12.4	K V	–	<0.74
J164914.8-390335	252.31140	-39.05968	133(10)	–	168(2)	45(4)	2.84	14.5	M V	–	<0.25
J165137.1-380756	252.90476	-38.13205	53(7)	–	169(3)	18(2)	2.50	13.5	M V	–	<0.64
J170418.8-301914	256.07797	-30.32060	52(7)	–	201(16)	25(5)	2.22	13.3	M V	–	<0.65
J170647.4-250140	256.69789	-25.02843	86(9)	–	104(1)	11(1)	2.09	12.1	K V	–	<0.40
J171259.0-390916	258.24594	-39.15413	49(7)	–	137(3)	11(2)	1.80	12.3	K V	–	<0.69
J172927.8-441605	262.36592	-44.26820	287(16)	–	199(2)	136(8)	2.38	14.1	M V	32	<0.12
J180636.3-371913	271.65172	-37.32032	82(10)	–	152(1)	23(3)	1.59	12.0	K V	120	<0.41
J182835.1-445728	277.14686	-44.95801	45(8)	–	83(0)	4(1)	1.84	11.6	K V	–	<0.75
J183905.3-372621	279.77204	-37.43952	185(15)	–	147(1)	48(4)	1.21	10.8	K V	70	<0.19
J184306.0-405805	280.77496	-40.96831	74(10)	–	58(0)	3(0)	2.51	12.1	M V	–	<0.46
J184347.8-354352	280.94962	-35.73135	136(13)	–	152(2)	38(4)	2.73	14.1	K V	–	<0.25
J193807.0-735408	294.52950	-73.90257	269(15)	–	119(0)	46(3)	1.77	12.6	K V	–	<0.13
J235840.1-484652	359.66756	-48.78185	48(6)	–	221(1)	28(4)	1.89	13.2	M V	–	<0.71

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