Binary Galaxies in the Local Supercluster and Its Neighborhood

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(Received May 22, 2008; Revised June 9, 2008)

We report a catalog of 509 pairs identified among 10403 nearby galaxies with line-of-sight velocities $V_{LG} < 3500$ km/s. We selected binary systems in accordance with two criteria (“bounding” and “temporal”), which require the physical pair of galaxies to have negative total energy and its components to be located inside the zero-velocity surface. We assume that individual galaxy masses are proportional to their total $K$-band luminosities, $M = L_K \times 6M_\odot/L_\odot$. The catalog gives the magnitudes and morphological types of galaxies and also the projected (orbital) masses and pair isolation indices. The component line-of-sight velocity differences and projected distances of the binary systems considered have power-law distributions with the median values of 35 km/s and 123 kpc, respectively. The median mass-to-$K$-band luminosity ratio is equal to $11M_\odot/L_\odot$, and its uncertainty is mostly due to the errors of measured velocities. Our sample of binary systems has a typical density contrast of $\delta \rho/\rho_c \sim 500$ and a median crossing time of about 3.5 Gyr. We point out the substantial fraction of binary systems consisting of late-type dwarf galaxies, where the luminosities of both components are lower than that of the Small Magellanic Cloud. The median projected distance for 41 such pairs is only 30 kpc, and the median difference of their line-of-sight velocities is equal to 14 km/s which is smaller than the typical error for radial-velocity (30 km/s). This specific population of gas-rich dwarf binary galaxies such as I Zw 18 may be at the stage immediately before merging of its components. Such objects, which are usually lost in flux-limited (and not distance-limited) samples deserve a thorough study in the $HI$ radio line with high spatial and velocity resolution.

\textbf{I. INTRODUCTION}

This is the first paper of a series devoted to the study of the visible and dark mat-
ter within the nearby, but sufficiently repre-
sentative volume of the Local Supercluster
(LS) and its neighborhood, which is compar-
able to the size of a cosmological homogeneity
cell. Over the past decade mass spectroscopic
and photometric galaxy surveys—SloanDSS,
2MASS, 2dF, and 6dF—have been per-
formed, which reshaped and refined our con-
cepts about the large-scale structure of the
Universe. However, the surveys performed
within certain sky areas or in narrow strips
out to redshifts \( z \simeq 0.1–1.0 \) proved to be in-
sufficient to allow analyses of the structure
and kinematics of small-scale features like
the Local Group, since they did not include
numerous dwarf galaxies because of their low
luminosity. For example, in the Sloan Dig-
tal Sky Survey (SDSS) the mean distance
between galaxies with measured line-of-sight
velocities is equal to 9 Mpc, which exceeds
the diameter of a typical cluster.

In recent years, considerable effort was fo-
cused on the study of the most nearby, so-
called Local Volume (LV) of radius 10 Mpc,
where more than 500 galaxies have been
found. Most of these objects are dwarf sys-
tems with measured line-of-sight velocities,
and about half of these galaxies already have
individual distance estimates that are accu-
rate to at least 10%, supported by obser-
vations made with the Hubble Space Tele-
scope. The detailed 3D pattern of the distri-
bution of galaxies in the LV, where the den-
sity of galaxies with measured velocities is
two orders of magnitude higher than the cor-
responding density for the SDSS, 2dF, and
6dF surveys, allowed the structure and kine-
matics of groupings to be studied on scale
lengths 0.1–1 Mpc [1–3]. The contribution of
the virial masses of nearby groups proved to
be three-to-four times less than the average
cosmological density, \( \Omega_m = 0.27 \). This in-
consistency between the local and global \( \Omega_m \) esti-
mates can be due to poor statistics or to some
specifics of our immediate neighborhood. An
evident way for resolving this paradox con-
sists in increasing the volume studied to make
it include the entire Local supercluster and
its immediate neighborhood. Tully [4, 5] was
the first to successfully undertake such an
analysis. He compiled a catalog and an atlas
of nearby galaxies with line-of-sight velocities smaller than 3000 km/s. Tully’s catalog
contains a total of 2367 galaxies located inside
the volume of diameter 82 Mpc, which is
comparable to the volume of a cosmological homogeneity cell. Tully used the hierarchical
dendrogram method to identify in this vol-
ume a total of 179 groups, which included
69% of all the galaxies considered. He then
used the virial masses of these groups to in-
fer a lower limit for the local mass density,
\( \Omega_{\text{vir}} = 0.08 \), which proved to be three times
smaller than the global value of \( \Omega_m = 0.27 \).
The amount of dark matter per unit luminosity of galaxies is known to increase from small groups to rich clusters. However, the virial regions of clusters contain only 5–10% of all galaxies, and about the same number of galaxies are associated with the unvirialized peripheral regions of these clusters. About half of all galaxies are members of groups like our Local Group, about one fourth of all galaxies reside in dispersed groups (clouds), and a total of 5–10% of all galaxies are located in the overall field. In such rather arbitrary and coarse partition groups of galaxies are the main contributors to the global mean mass density. However, the characteristic estimates of the masses of groups of galaxies differ by more than one order of magnitude. This circumstance emphasizes the need for further refinement of virial masses of groups of galaxies, which is great importance for cosmology.

Below we consider galaxies with line-of-sight velocities with respect to the Local Group $V_{LG} < 3500$ km/s. After excluding the region of strong absorption at Galactic latitudes $|b| < 15^\circ$ we fixed a total of 10403 galaxies in this volume and applied to them the criterion of identifying multiple systems.

In this paper we consider only binary galaxies, because the corresponding sample illustrates most clearly the specific features of the criterion employed. In our next papers we plan to present the list of galaxy triplets and analyze the properties of groups with four to 400 members, describe our catalog of very isolated LSC galaxies, and specific features of the distribution of voids. Individual Tally–Fisher distances [6] are already available for about 1700 LSC galaxies [7]. We plan to use these data to analyze non-Hubble motions in the LSC in order to probe the distribution of dark matter on 3–10 Mpc scale lengths.

II. CRITERIA FOR SELECTING MULTIPLE SYSTEMS OF GALAXIES

Various algorithms have been suggested to identify groups of galaxies in a magnitude- or distance-limited sample. All these algorithms actually reduce to the following two main ones: percolation (the “friend of friend” method) and taxonometry (construction of a hierarchical tree).

Huchra and Geller [8] used the percolation method by joining galaxies into groups based on the condition that their projected mutual distances and line-of-sight velocity differences should be smaller than certain threshold values $R_c$ and $V_c$. With $R_c = 0.52$ Mpc and $V_c = 600$ km/s the above authors grouped about 74% CfA galaxies. The resulting groups had a typical size of $R_H = 1.1$ Mpc, line-of-sight velocity dispersion of $\sigma_v = 208$ km/s, and an average virial mass
of $\lg(M_{\text{vir}}/M_\odot) = 13.5$. Many authors applied this method to different galaxy samples. One of the weak points of the method is freedom in the choice of two percolation parameters, $R_c$ and $V_c$, whose variation affects substantially the characteristic sizes and masses of the groups and the percentage of galaxies found to be group members. In the percolation algorithm parameters $R_c$ and $V_c$ trace certain contrast of galaxy number density and overlooks many real groups in low-density regions, while clusterizing small unvirialized aggregates in high-density regions. Another disadvantage of the "friend of friend" methods manifest itself in the form of the strong dependence of group parameters on the distance $D$ to the group. Numerous attempts aimed to reduce this dependence by introducing variable quantities $R_c(D)$ and $V_c(D)$ resulted in subjectively arbitrary choices. The most recent application of the percolation method to 2MASS [9] galaxies yielded 1258 groups and 1710 pairs of galaxies for a relative density contrast of $\delta \rho/\rho = 80$. In general, members of groups and pairs make up for a total of 36% and 17% of the entire sample. Groups with $n \geq 5$ elements have a projected radius of about 1 Mpc, line-of-sight velocity dispersion on the order of 200 km/s, and an average virial mass of $\lg(M_{\text{vir}}/M_\odot) \sim 13.5$. At the depth of the 2MASS sample ($D_{\text{max}} = 140$ Mpc) the contribution of virial masses of groups identified using the percolation method is equal to only $\Omega_m = 0.10 - 0.13$. An examination of the list of these groups gives a rise to numerous questions. In particular, we do not understand why Eridanus+Fornax I is the most massive cluster complex instead of Virgo, which we know as the center of the Local Supercluster.

Tully [4, 5] and Vennik [10] used another, ‘taxonomic’, method to group galaxies into pairs in accordance with the maximal ratio of luminosity to cubed mutual distance ($L_{ik}/R_{ik}^3$). The resulting pair was substituted by a “particle” with the luminosity equal to the total of the galaxies and the search for maximal ($L_{ik}/R_{ik}^3$) was repeated. The process ended by the construction of a single hierarchical “tree” with branches containing the entire galaxy sample considered. Cutting the tree branches at a certain level of the contrast of volume density yielded a set of branches (groups) whose sizes and virial masses depended on the adopted density (luminosity) contrast. Tully [4] used the method of dendrograms to infer a characteristic group radius of 0.32 Mpc and the average line-of-sight velocity dispersion of $M_{\text{vir}}/L_B = 94M_\odot/L_\odot$, which proved to be substantially lower than the average ratio for groups of the Huchra–Geller [8] list. Practical applications of both the percolation and the dendrogram methods ignored individual
properties of galaxies by viewing them as indistinguishable particles. It is evident that the same threshold values $R_c$ and $V_c$ would be sufficient (and even redundant) for clustering a pair of dwarf galaxies and, at the same time, evidently insufficient to bind a pair of giant galaxies. Such inadequacy of the criterion distorts the estimates of virial masses.

III. CLUSTERIZATION ALGORITHM

Galaxies can be grouped into small systems with their individual properties taken into account by viewing two arbitrary galaxies as a virtual bounded pair [11]. We proceed from this evident premise and require that the difference $V_{ik}$ of the space velocities of galaxies in physical pair and their mutual space distance $R_{ik}$ obey the condition of negative total energy

$$\frac{V_{ik}^2 R_{ik}}{2GM_{ik}} < 1,$$  

where $M_{ik}$ is the total mass of the pair and $G$ is the gravitational constant. We correct the squared velocity difference of the pair $V_{ik}^2$ for velocity measurement errors. However, observations give us only the line-of-sight projection of velocity $V_{ik}$ and the sky-plane projection of $R_{ik}$. Therefore condition (1) must be supplemented by an additional constraint onto the maximum distance between the components for fixed mass $M_{ik}$. The condition that the components of the pair are located inside the “zero-velocity” sphere [12] has the following form

$$\frac{\pi H^2 R_{ik}^3}{8GM_{ik}} < 1,$$  

where $H$ is the Hubble constant. Note that both conditions (1) and (2) are conservative with respect to projection factors, i.e., use of projected mutual velocities and distances in formulae (1) and (2) instead of the space velocities and distances does not exclude true (physical) pairs. However, these conditions do not prevent false (optical) pairs from getting into the catalog.

Our algorithm is actually a variant of the percolation method. We first identify all pairs satisfying conditions (1) and (2) and then group all pairs having a common component into a single entity. Finally, if we find a galaxy to be a satellite of several more massive galaxies, we link it to the most massive neighbor. In particular, a group may be a subgroup inside a more massive structure. In this sense, our algorithm combines the advantages of both the “friend of friend” method and hierarchical approach.

We determine the masses of galaxies from their -band IR luminosity assuming that all galaxies have the same “mass–luminosity” ratio:

$$M/L_K = \kappa(M_\odot/L_\odot),$$  

where $\kappa$ is a proportionality constant.
where we set \( \kappa \) equal to 6. In our algorithm \( \kappa = 6 \) is actually the only more or less arbitrary quantity. We chose it based on the following assumptions. According to the data of Bell et al. [13], the average cosmic mass-to-\( K \)-band-luminosity ratio is equal to \( 0.95 \pm 0.27 M_\odot / L_\odot \), which agrees well with the results of the computations of Fukijita et al. [14]. According to the data compiled by Karachentsev and Kut’kin [15], for galaxies of the Local Volume the average ratio of the mass inside standard radius \( R_{25} \) to the integrated \( K \)-band luminosity is equal to \( \langle M_{25}/L_K \rangle = 1.3 \pm 0.2 \) in solar units, and this ratio remains almost constant and varies from \( 1.1 \pm 0.2 \) for giant galaxies with the mean luminosity of \( 1.1 \times 10^{11} L_\odot \) to \( 1.5 \pm 0.2 \) for dwarf galaxies with the mean \( K \)-band luminosity of \( 1.1 \times 10^7 L_\odot \) (the slight increase of \( \langle M_{25}/L_K \rangle \) toward dwarf galaxies is evidently due to higher content of the gaseous component). Flat rotation curves observed for most of galaxies indicate the dominating role of the dark halo beyond the standard radius \( R_{25} \). The most extended rotation curves inferred from the data of the 21-cm line emission reach out to \( R_{\text{max}} = (3–6) R_{25} \) [16–18]. These \( R_{\text{max}} \) values correspond to the global ratio of \( M/L_K \simeq 6 M_\odot / L_\odot \) used in formula (3).

Note that we “trained” clusterization algorithm (1–3) by applying it to the detailed 3D distribution of galaxies in the Local Volume. Choosing dimensionless parameter \( \kappa \) values in the \( \kappa < 4 \) interval drastically reduces the relative number of clusterized galaxies, whereas adopting \( \kappa > 10 \) results in grouping of galaxies into extended and evidently nonvirialized aggregates. With the value \( \kappa = 6 \) adopted in this paper the dwarf companions in known nearby groups are usually located inside the zero-velocity spheres around massive galaxies of the corresponding groups. Note also that the average virial mass-to-luminosity ratio \( \langle M_{\text{vir}}/L_K \rangle = 17.5 \pm 3.6 M_\odot / L_\odot \) for eight groups of the Local Volume: Local Group, M81, CenA, M83, IC342, Maffei, LeoI, NGC6946 (whose mean luminosity is \( \langle L_K \rangle \approx 1.3 \times 10^{11} L_\odot \)) is almost equal to the typical \( M_{\text{vir}}/L_K \) ratio that we inferred for small groups of the same luminosity inside the entire volume of the Local Supercluster. Guzik and Seljak [19] found a similar total mass-to-\( K \)-band luminosity ratio—\( (17.0 \pm 2.9 M_\odot / L_\odot) \)—for small groups and field galaxies with \( \langle L_K \rangle \sim 0.8 \times 10^{11} L_\odot \) by analyzing effects of gravitational lensing, and this fact demonstrates the good agreement of the galaxy group mass estimates obtained by two independent methods.
IV. INITIAL OBSERVATIONAL DATA

Our main sources of the data on line-of-sight velocities, apparent magnitudes, morphological types, and other parameters of galaxies are the HyperLEDA \(^1\) [20] and NED\(^2\) databases. Note that these databases contain a substantial number of objects with erroneous line-of-sight velocities adopted from automatic sky surveys like 6dF. Cases of confusion of coordinates and velocities are rather common for galaxies located closely to each other on the celestial sphere. The apparent magnitudes and line-of-sight velocities in the SDSS survey often correspond to individual knots and associations in bright galaxies. These effects are very important for selecting of true close pairs of galaxies. We took these effects into account and made necessary corrections, where possible. This proved to be most time-consuming part of our work. Because the databases are permanently updated with new (and sometimes erroneous) data, it is necessary to repeat the correction of information. That is why we fixed the sample of initial data as it was in mid-2006 (i.e., June, 2006).

We independently found optical identifications for many HI sources of the HIPASS survey by refining their coordinates and determining the apparent magnitudes and morphological types of galaxies [21]. We examined many dwarf galaxies, especially those with low surface brightness, on the DSS digital images in order to find their principal parameters. The typical error of our visual estimates of galaxy magnitudes is about 0.5\(^m\), and the average error of the inferred type is about ±2 in the numeric scale employed by de Vaucouleurs in the RC2 catalog [22]. The best indicator of the baryonic mass of a galaxy is known to be its infrared magnitude, which depends only slightly on the amount of dust and the number of young stellar complexes. Thus we adopted the longest-wavelength, K-band (\(\lambda = 2.16\ \mu m\)) part of the all-sky 2MASS [23, 24] as our main source of photometry. We converted the estimates of galaxy magnitudes in other optical (\(B, V, R, I\)) and near-infrared bands (\(J, H\)) into the K-band magnitude using synthetic galaxy colors of Bizzoni [25] and Fukujita et al. [26]. The greatest amount of photometric data is available in the \(B\)-band. We use the following relations between the \(B-K\) color excess and morphological type discussed by Jarett et al. [24] and Karachentsev and Kut’kin [15]:

\[
\langle B-K \rangle = +4.10, \text{ for galaxies of types } T \leq 2 \text{ (i.e., E, S0, and Sa), which are dominated by bulges,}
\]

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\(^1\) http://leda.univ-lyon1.fr
\(^2\) http://nedwww.ipac.caltech.edu/
\[ \langle B - K \rangle = +2.35 \] for late-type galaxies 
\[ T \geq 9 \] (i.e., Sm, Im, Irr), and 
\[ \langle B - K \rangle = 4.60 - 0.25 \times T \] for intermediate-type \( (T = 3 - 8) \) objects.

Note that due to the short exposures the 2MASS survey proved to be insensitive to low-surface brightness and blue galaxies. For about one thousand dwarf and spheroidal galaxies recently discovered by Karachentseva et al. [27, 28] in the volume of the Local Supercluster, only eye-estimated \( B \)-band magnitudes are available, which we converted into the \( K \)-band magnitudes using the method described above. Despite the lack of good photometry for these objects, gas-rich dIr galaxies have accurate 21-cm line radial velocities and they are important “test particles”. Due to the low luminosities of dwarf galaxies, large errors of estimated magnitudes have virtually no effect on the results of clusterization performed using our algorithm.

We collected all the line-of-sight velocity measurements available in the HyperLEDA and NED databases for galaxies in the Local Supercluster and its neighborhood. We excluded unreliable and inaccurate measurements, which velocity-measurement error exceeds 75 km/s. In automatic surveys (SDSS, 2dF, and 6dF) we also excluded the measurements with velocities smaller than 600 km/s, because they mostly represent Milky-Way stars projected onto distant galaxies. If several line-of-sight velocity measurements were available for a galaxy, we chose the median one, the velocity error was estimated as the dispersion of all measurements with the exclusion of the outliers.

Our initial sample cleaned from unreliable and doubtful cases contained a total of 10403 galaxies with the line-of-sight velocities \( V_{LG} < 3500 \) km/s, located at the Galactic latitudes \( |b| > 15^\circ \). For all these galaxies the apparent magnitudes and morphological types have been found. To prevent the distortion of the clusterization process at the boundary of the volume considered, we also use the data on the galaxies located in the boundary regions with \( 10^\circ < |b| < 15^\circ \) and with \( 3500 < V_{LG} < 4000 \) km/s, because they may contain some of the members of galaxy groups with high virial velocities. Grouping criteria (1–3) allowed us to identify within the Local Supercluster volume a total of 1018 galaxies belonging to binary systems.

V. THE CATALOG OF 509 NEARBY GALAXY PAIRS

The Table contains the binary galaxies that we identified using our criteria. The first column gives the number of the pair in the catalog. The second column gives the name of the galaxy or its number in the well-known NGC, IC, UGC, CGCG, ESO, PGC,
and DDO catalogs or in the 2MASS, 6dF, APMUKS, SDSS, IRAS, and other sky surveys as given in the NED. Note that for practical reasons we omit the coordinate part of the galaxy name used in surveys. The third column gives the galaxy coordinates for the epoch of 2000.0. The fainter component of the pair follows the primary component and the pairs are sorted in right ascension. Columns (4) and (5) give the line-of-sight velocity of the galaxy (in km/s) with respect to the centroid of the Local group and its standard error, respectively. Columns (6) and (7) give the coded morphological type and the apparent $K$-band magnitude corrected for Galactic extinction according to Schlegel et al. [29], respectively. Column (8) gives the projected separation between the galaxies in kpc. Column (9) gives the logarithm of the total $K$-band luminosity of the pair. Columns (10) and (11) give the orbital mass-to-luminosity ratio with and without velocity measurement correction, respectively. We compute the mass by the following formula [30]

$$M_p = \frac{16}{G\pi} \Delta V^2 R_\perp$$

(4)

using the component line-of-sight velocity difference and projected linear separation. We compute the distance to the pair from the average line-of-sight velocity with respect to the centroid of the Local group with the adopted Hubble-constant value of $H = 73$ km/s/Mpc. Column (12) gives the logarithm of the smallest of the values given by criteria (1) and (2) for the given pair with respect to the surrounding galaxies. The higher is this quantity, the greater is the degree of isolation of the considered pair. A close-to-zero value implies that the pair is at the threshold of the formation of a bigger structure (“capturing” of a new member or “joining” other groups). We compute the total luminosity of the pair assuming that the absolute magnitude of the Sun is $K_s = 3.28^m$ [31]. We omit the negative unbiased estimated of the orbital mass for the pairs with line-of-sight velocity differences smaller than the corresponding measurement errors.

VI. DISTRIBUTIONS OF THE PRINCIPAL PARAMETERS OF THE PAIRS

The fraction of galaxies that are members of binary systems in the Local Supercluster and its neighborhood is about 10%, which is somewhat lower than the corresponding values 12–17%, according to the data of Huchra and Geller [8], Crook et al. [9], Magtesyan [32], and Gourgoulhon et al. [33]. Figure 1 shows the distribution of the mean line-of-sight velocity of the pairs. The median
of this distribution is equal to 2389 km/s. Figure 2 shows the map of the distribution of pair centers on the sky in equatorial coordinates. The region of strong Galactic absorption is shown by gray color. It is obvious from this map and from 3D distribution (Fig. 3) that the pairs do not reveal clear large scale structure. However, on short scale lengths in the vicinity of 1 Mpc, the pairs exhibit excess of mutual association compared to uniform random distribution. The pairs 21+22 and 194+195 are examples of such close associations.

Figure 4 shows the distribution of the line-of-sight velocity difference between the satellite and the primary component of the pair. The distribution has quite symmetric shape with a mean difference of $-1 \pm 3$ km/s, which indicates that our sample exhibits no excess of positive velocities discussed by Arp [34] in cases of the companions of M31 and other galaxies. The root-mean-squared velocity difference for the components of 509 pairs is equal to $\sigma_v = 62$ km/s. Note that in the vicinity of zero the distribution is much sharper than a Gaussian. Note also that for about 60% of all pairs the velocity difference is smaller than its error of measurement. For such pairs unbiased estimates of orbital masses are negative and we do not give them in Column 11 of the table. Taking into account broadening of distribution by errors, the true distribution in Fig. 4 must have an even sharper peak at zero velocity difference. Note the measurement errors of velocity must be reduced several times to improve the estimation of mean mass of pair.

Figure 5 shows the distribution of the projected linear separation between the components in 509 pairs. The median and mean separations are equal to 123 and 177 Mpc, respectively, and the separation in the widest pairs reaches 1 Mpc. In general, the population of binary galaxies outlines fairly well the linear size of a typical dark halo in the ΛCDM model. The distribution $N(R_\perp)$ can be fitted by a power law with exponent $\alpha = -1.1$. Figure 6 shows the two-dimensional distribution of the line-of-sight velocity difference and projected separation between the components of the pairs in logarithmic scale. Despite the strong effect of projection factors, pairs show a tendency toward a decrease of $\Delta V$ with decreasing separation between the components, however, the slope of the regression line (the dashed line) is very close to zero and the line differs significantly from the Keplerian law (the solid line). This envelope corresponds to values $\Delta V = 121$ km/s and $R = 750$ kpc, which is close to Andromeda and Milky Way as wide pair of galaxies. Note that normalization of $\Delta V$ by the total luminosity of the pair makes the slope of the regression line closer to the Keplerian value.
Figure 1: The distribution of the average line-of-sight velocities of pairs with respect to the Local Group.

Figure 2: The celestial distribution of pairs in the Local Supercluster in equatorial coordinates. The clumpy gray region indicates the domain of strong Galactic absorption.
Figure 3: Projected distribution of pairs in the Local Supercluster in Cartesian coordinates.

Figure 4: The distribution of the companion minus primary line-of-sight velocity difference.

The left- and right-hand panels in Figure 7 show the distributions of the visual (left) and absolute (right) $K$-band magnitudes of the bright (1) and faint (2) components of the pairs. Both distributions fill more or less uniformly a wide sector of possible values over 10-magnitude range. About 40% of all pairs components differ in luminosity less than a
Figure 5: The distribution of the projected separation between the components in the pairs of the Local Supercluster.

Figure 6: The distribution of the line-of-sight velocity difference and projected separation for the pairs of the Local Supercluster.
10 times. At the same time, there are galaxies, e.g., NGC 3044, NGC 2683, and NGC 3621, with dwarf companions that are 7–10 magnitudes fainter than the primary component. The special interest are drawn by the pairs located in the top right corner of the right-hand panel in Fig. 7. The dashed line in this panel corresponds to $M_K = -19.0$ (the luminosity of the SMC). Pairs that are located above this line have both components that are dwarf galaxies. There are total of 41 pairs like UGC 5272 and its companion (pair No. 159), which are located in the domain of lower-than-SMC luminosity. The pair of metal-poor BCD dwarfs SAO0822+3545 and SDSSJ0825+3532 (pair No. 113) studied by Cnehgalur et al. [35] is another example. Almost all these binary dwarfs are gas rich and contain young blue stellar population. The average component line-of-sight velocity difference for these pairs is equal to only 25 km/s, and the median and mean projected separations are equal to 30 and 42 kpc, respectively. These pairs of blue dwarfs with considerable reserves of gas and active star formation may be a sort of small multiple systems at a stage close to component merger. On the other hand, Tully et al. [36] pointed out the presence in the Local Volume of groups which exclusively consist of dwarf galaxies. Note that old percolation criteria proved to be insensitive to multiple dwarf systems. They were discovered as a result of, among other things, in-depth analysis of the
population of the Local Volume and of use a more refined algorithm for group searching. It is evident that HI-observations with high angular resolution would be a promising method for analyzing the kinematics and evolutionary status of dwarf pairs and groups.

Figure 8 shows the distribution of the morphological types of the bright (1) and faint (2) components of 509 pairs. On the average, the primary galaxy have an earlier type ($\langle T_1 \rangle = 3.8$) than its companion ($\langle T_2 \rangle = 6.9$). This fact is easy to explain by the well-known correlation between the luminosity and morphological type of galaxies. The lines of direct and reverse regression in Fig. 8 point out a weak correlation between the morphological types of the components, which also can be due to the luminosity effect.

Figure 9 shows the distribution of estimated orbital masses and orbital mass-to-luminosity ratios for galaxy pairs inferred in accordance with formula (4). The median mass of the pairs is $1.5 \times 10^{11} M_\odot$, and the median mass-to-luminosity ratio is $11.3 M_\odot/L_\odot$, which is almost twice the $\kappa = 6$ value that we adopt for individual galaxies. However, these mass estimates are statistically biased. We already pointed out above that the line-of-sight velocity difference is smaller than its standard error for more than half of all pairs. To obtain an unbiased mass estimate, we must substitute $(V_{12}^2 - \sigma_1^2 - \sigma_2^2)$ for $V_{12}^2$ in formula (4). In this case mass estimations become negative for 60% of the pairs and the median mass-to-luminosity ratio also becomes negative $(-3 M_\odot/L_\odot)$. The distributions of $M$ and $M/L$ for the pairs corrected to for velocity measurement errors are shown in gray, but they represent only the domain of positive masses. All these data illustrate the fact that the accuracy of line-of-sight velocities measured in modern optical spectroscopic galaxy surveys (2dF, SDSS, 6dF), which is about 50 km/s, is clearly insufficient to compute a bona fide average mass of galaxy pairs. Obviously the special observations of binary galaxies are needed to reduce the velocity errors down to 5–10 km/s.

Figure 10 shows how the line-of-sight velocity difference, projected separation between the components, and the orbital mass-to-luminosity ratio of binary galaxies vary with heliocentric distance. It is evident that in our sample the fraction of pairs consisting of two dwarf components decreases appreciably toward the outskirts of the volume considered. However, the average dynamical parameters of the ensemble of galaxy pairs vary little with distance. This fact again demonstrates the advantage of our criterion, which takes individual properties of galaxies into account.
Figure 8: Distribution of the types of the bright (1) and faint components. The lines show the direct and inverse regression.

Figure 9: Distribution of estimated orbital masses and orbital mass-to-luminosity ratios for the pairs of the Local Supercluster.
VI. COMPARISON WITH OTHER SAMPLES OF GALAXY PAIRS

The most detailed study of binary galaxies was performed by Karachentsev [37]. He compiled a catalog of 603 isolated Northern-sky pairs with components brighter than $B = 15.7^m$ (they are denoted as KPG in the NED database). These pairs were identified on the condition that they are isolated with respect to nearby projected galaxies without invoking line-of-sight velocity data. Later Reduzzi and Rampazzo [38] used the same criterion to identify a total of 409 pairs in the Southern sky (these pairs are denoted as RR in the NED database). The isolation condition favored the identification of closer binary systems with brighter components. The characteristic depth of the KPG sample is 6350 km/s, which is substantially greater than the Local Supercluster sample considered in current paper. After taking into account various selection effects in the catalog of isolated
pairs we estimate the fraction of galaxies in binary systems to be $12\pm2\%$. The KPG pairs with their order-of-magnitude higher luminosities (about $1.3 \times 10^{11}L_\odot$ if transformed into the $K$-band values) have large line-of-sight velocity differences, $\langle V_{12}\rangle = 120$ km/s. With the average component separation of only $\langle R_\perp \rangle = 40$ kpc, isolated pairs have a moderate orbital mass-to-luminosity ratio of $\langle M/L_B \rangle = 7.8M_\odot/L_\odot$ and almost do not show evidence for dark halo on these scale lengths.

Our list contains a total of 16 pairs located within the rather thoroughly studied Local Volume. In cases where individual distances have been measured for components of nearby pairs these distances confirm the relative closeness of the pair members. However, the distances of the NGC 4449 and UGC 7577 galaxies (pair No. 281) (4.21 and 2.54 Mpc, respectively) indicate that these galaxies are just accidentally located along the same line of sight. Despite the small line-of-sight velocity difference (252 km/s and 240 km/s) and rather isolated location ($II = 2.3$) these members of the CVnI cloud cannot be viewed as an isolated physical pair.

Among the isolated pairs of the KPG catalog there are several known nearby pairs, in particular, NGC 5194 + NGC 5195 (M51) and NGC 672 + IC 1727. Although our criterion (1–3) clusterizes these galaxies, it nevertheless changes their status from pairs to groups, due to the presence of other dwarf
companions. Note that the properties of multiple galaxies identified using a certain criterion in the Local Volume differ from the corresponding properties of multiple galaxies found in deep samples due to the decreasing detection rate of dwarf objects with distance. That may be why the fraction of galaxies in binary systems, 12–17%, in about 100 Mpc deep samples is somewhat higher than in the Local Supercluster (10%) or Local Volume (7%).

VIII. CONCLUSIONS

We identified the galaxy pairs that we included in our catalog without using the condition of isolation. Therefore, as new dwarf galaxies are found in the volume of the Local Supercluster and new line-of-sight velocity measurements are made for galaxies located in the vicinity of the pars, the list of pairs will be updated by including new objects and some pairs will be promoted to a higher multiplicity category. However, our sample still gives a correct idea about the kinematics of the smallest, most simple systems within the 95-Mpc diameter volume. About 40% of the considered pairs have dimensionless parameters $II > 5$, which allow us to treat these objects as sufficiently isolated systems (Fig. 11). With the median mass of the pair, $1.5 \times 10^{11} M_\odot$, and median projected component separation of $R_\perp = 123$ kpc, the typical density contrast in the ensemble of our pairs is $\delta \rho/\rho_c \sim 500$ in the units of critical density. At such contrast systems of galaxies can be considered to be dynamically detached from Hubble flow. On the other hand, with the median absolute value of the component line-of-sight velocity difference of 35 km/s and with the median projected separation of 123 kpc, a typical pair of our catalog is characterized by the “crossing time” of $3.5 \times 10^9$ yr. Hence the components of a typical pair could make about of four turns about the common mass center.

The use of the new clusterization algorithm, which takes into account individual properties of galaxies, allowed us to discover a surprisingly large number of pairs consisting of dwarf galaxies. Many components of these systems, which are located far from normal galaxies, are rich in gas and are characterized by active star formation. Such binary dwarf galaxies (for instance, I Zw18) have been known long ago. Among of them the galaxies with very low metallicity [39] occur quite often. Our list of galaxy triplets with velocities $V_{LG} < 3500$ km/s also contains triple systems of dwarfs with blue components. Many properties of our systems of dwarf galaxies do not differ from the corresponding properties of associations of nearby dwarfs as described by Tully et al. [36]. The
closest example of the objects of this population is located at the boundary of the Local group and includes NGC 3109, Sex A, Sex B, and Antlia. The mutual velocities of these “dark groups” are equal to only 10 km/s, i.e., they are comparable to velocity measurement errors. The evolutionary status of multiple dwarf galaxies still remains totally unclear. According to the results of numerical simulations performed by Bekki [40], the evolution of such dwarf systems with extended gaseous envelopes may be governed by their consequent mergers triggering the star-formation bursts. We consider mass 21-cm line observations of these objects on aperture synthesis radio telescopes with a resolution of about 1 km/s is very perspective.
## Appendix

Table I: **Table.** Catalog of binary galaxies in the Local Supercluster and its neighborhood.

| No. | Name                  | J2000.0               | $V_{LG}$ | ± | T | $K$ | $R_1$ | $log L$ | $L/L_K$ | $V/L_K$ | log(II) |
|-----|-----------------------|-----------------------|----------|---|---|-----|-------|---------|---------|---------|---------|
| 1   | NGC7820               | J000430.8+051201      | 3252     | 39| 1 | 9.60| 507   | 10.81   | 30.9    | 25.6    | 0.30    |
| 2   | UGC00027              | J000428.8+055050      | 3310     | 5  | 6 | 12.25|       |         |         |         |         |
| 2   | 6dF...                | J000432.0−220503      | 3154     | 74| 10| 13.05| 217   | 9.55    | 320.8   | 1.41    |         |
| 3   | ESO538−021            | J000545.9−220442      | 3220     | 10 | 6 | 13.80|       |         |         |         |         |
| 3   | UGC00132              | J001400.9+125746      | 1896     | 9  | 8 | 12.85| 72    | 9.08    | 15.1    | 5.7     | 0.78    |
| 4   | PGC138138             | J001354.2+124827      | 1910     | 5  | 10| 14.70|       |         |         |         |         |
| 5   | ESO078−022            | J002056.8−635126      | 1632     | 20 | 4 | 11.18| 226   | 9.64    | 37.5    | 0.88    |         |
| 5   | 6dF...                | J002702.9−635126      | 2337     | 5  | 6 | 10.33| 23    | 10.21   | 5.8     | 3.4     | 1.67    |
| 6   | UGC00260              | J003202.2−641512      | 2474     | 13 | 3 | 9.01 | 83    | 10.82   | 32.4    | 28.3    | 1.85    |
| 6   | CGCG...               | J003201.1−642325      | 2622     | 27 | 7 | 12.02|       |         |         |         |         |
| 8   | UGC00320              | J003230.9+023427      | 2541     | 5  | 6 | 12.88| 144   | 9.29    | 4.4     | 2.14    |         |
| 8   | APMUKS...             | J003145.4+024253      | 2548     | 20 | 9 | 15.44|       |         |         |         |         |
| 9   | UGC00148              | J003415.5−314710      | 1842     | 17 | −2| 9.05 | 232   | 10.63   | 5.4     | 0.25    |         |
| 9   | IC1554                 | J003307.4−321530      | 1814     | 43 | −1| 10.14|       |         |         |         |         |
| 9   | NGC0255               | J004747.3−112807      | 1694     | 15 | 4 | 9.66 | 174   | 10.23   | 5.8     | 3.6     | 0.81    |
| 10  | DD005                 | J004603.4−113020      | 1716     | 5  | 9 | 11.94|       |         |         |         |         |
| 10  | NGC0357               | J010321.9−062021      | 2515     | 16 | 0 | 8.43 | 269   | 11.02   | 1.0     | 0.6     | 0.93    |
| 10  | MCG...                | J010508.6−061646      | 2533     | 5  | 9 | 12.97|       |         |         |         |         |
| 11  | NGC0424               | J011127.7−380500      | 3455     | 7  | 0 | 9.12 | 372   | 11.17   | 5.1     | 0.74    |         |
| 11  | NGC0438               | J011334.2−375406      | 3414     | 26 | 3 | 9.99 |       |         |         |         |         |
| 12  | NGC0428               | J011255.7+005854      | 1287     | 5  | 9 | 9.37 | 65    | 10.07   | 0.5     | 1.99    |         |
| 12  | UGC00772              | J011339.4+005228      | 1296     | 6  | 10| 13.63|       |         |         |         |         |
| 13  | NGC0473               | J011955.1+163241      | 2317     | 5  | 0 | 9.53 | 138   | 10.51   | 5.5     | 4.7     | 0.92    |
| 13  | LSBC...               | J011947.4+164725      | 2350     | 6  | 10| 15.65|       |         |         |         |         |
| 14  | UGC00903              | J012147.8+173533      | 2697     | 7  | 4 | 9.38 | 355   | 10.70   | 1.4     | 0.6     | 0.40    |
| 14  | UGC00883              | J012101.0+170424      | 2684     | 5  | 10| 13.63|       |         |         |         |         |
| 15  | UGC00964              | J012455.0+074316      | 2884     | 6  | 3 | 11.89| 220   | 9.89    | 41.7    | 34.9    | 0.41    |
| 16  | VV730...              | J012319.3+074747      | 2849     | 8  | 10| 12.88|       |         |         |         |         |
| 17  | LSBC...               | J013029.0+024955      | 2240     | 10 | 5 | 13.57| 60    | 9.09    | 9.1     | 0.11    |         |
| 17  | UGC01075              | J013002.5+025109      | 2227     | 6  | 8 | 13.93|       |         |         |         |         |
| 17  | NGC0578               | J013029.1−224002      | 1645     | 5  | 5 | 8.58 | 44    | 10.57   | 9.3     | 0.47    |         |
| 18  | 2MASX...              | J013011.9−224545      | 1563     | 74 | 4 | 12.80|       |         |         |         |         |
| 18  | UGC00573              | J013049.3+411526      | 3028     | 5  | 11.07| 235  | 10.26   | 4.9     | 3.4     | 1.94    |         |
| No. | Name            | J2000.0       | $V_{LG}$ $\pm$ T | $K$ | $R_\perp$ | $\log L / L_\odot$ | $M_{L_K}$ / $L_\odot$ | $M_{\odot}$ / $L_\odot$ | $\log(II)$ |
|-----|-----------------|---------------|------------------|-----|----------|---------------------|------------------------|-------------------------|-----------|
| 19  | UGC01102        | J013229.6+043607 | 2092 29 6 | 11.30 | 30 | 9.74 | 6.9 | 0.06 |
| 20  | NGC0613         | J013418.2−292506 | 1470 8 4 | 7.02 | 503 | 11.12 | 4.3 | 3.3 | 0.68 |
| 21  | ESO413−007      | J017259.3−290512 | 1501 8 1 | 12.73 |   |       |     |     |       |
| 22  | UGC0632         | J013717.5+055240 | 3301 12 −2 | 10.08 | 496 | 10.58 | 113.2 | 0.38 |
| 23  | UGC0645         | J014008.7+054336 | 3441 5 3 | 10.15 | 112 | 10.66 | 8.1 | 6.7 | 0.49 |
| 24  | UGC0676         | J014857.3+055427 | 1630 6 1 | 9.04 | 180 | 10.68 | 14.1 | 13.5 | 0.39 |
| 25  | NGC0723         | J015345.7−234528 | 1486 5 4 | 10.30 | 227 | 9.81 | 26.1 | 9.9 | 1.30 |
| 26  | ESO477−012      | J015345.7−230650 | 1460 10 10 | 14.27 |   |       |     |     |       |
| 27  | NGC0779         | J015942.3−055747 | 1461 5 3 | 8.09 | 421 | 10.68 | 13.6 | 12.6 | 0.30 |
| 28  | UGC0821         | J021112.1+034647 | 3208 38 −1 | 11.02 | 59 | 10.43 | 62.3 | 53.0 | 1.18 |
| 29  | NGC0853         | J021141.2−091822 | 1615 34 9 | 10.44 | 243 | 9.86 | 3.5 | 1.01 |
| 30  | MRK1025         | J020959.7−085011 | 1624 14 9 | 13.15 |   |       |     |     |       |
| 31  | NGC0865         | J021615.1+283559 | 3175 8 5 | 10.22 | 304 | 10.51 | 0.3 | 2.47 |
| 32  | UGC0876         | J021631.8+281213 | 3170 6 10 | 14.17 |   |       |     |     |       |
| 33  | NGC0885         | J022136.5−053117 | 2338 5 6 | 9.40 | 22 | 10.59 | 8.2 | 0.14 |
| 34  | NGC0895         | J022145.2−053208 | 2448 75 9 | 13.86 |   |       |     |     |       |
| 35  | NGC0922         | J022504.4−244717 | 3052 9 6 | 10.02 | 101 | 10.59 | 17.3 | 1.90 |
| 36  | 2MASX−007       | J022430.0−244444 | 3126 74 4 | 12.99 |   |       |     |     |       |
| 37  | NGC0986         | J023334.4−390242 | 1876 36 2 | 7.77 | 177 | 11.04 | 4.9 | 1.05 |
| 38  | ESO299−011      | J023534.7−390131 | 1926 74 5 | 12.54 |   |       |     |     |       |
| 39  | IC0239          | J023627.9+385812 | 1096 5 6 | 8.75 | 238 | 10.16 | 0.1 | 0.47 |
| 40  | NGC1023C        | J024039.6+392247 | 1094 5 10 | 14.74 |   |       |     |     |       |
| 41  | NGC1090         | J024633.9−001449 | 2809 5 4 | 9.19 | 389 | 10.80 | 54.7 | 43.1 | 0.54 |
| 42  | UGC042         | J024852.7−002103 | 2722 20 10 | 14.03 |   |       |     |     |       |
| 43  | NGC1140         | J025433.6−100140 | 1508 5 9 | 10.49 | 204 | 9.77 | 0.0 | 0.30 |
| 44  | 6dF...          | J025533.5−103208 | 1509 74 10 | 13.54 |   |       |     |     |       |
| 45  | MCG...          | J030031.8−154411 | 1506 55 7 | 10.77 | 143 | 9.74 | 0.0 | 0.63 |
| 46  | 2MASX...        | J030042.9−160752 | 1507 29 9 | 12.11 |   |       |     |     |       |
| 47  | NGC1172         | J030136.1−145012 | 1645 8 4 | 9.19 | 239 | 10.36 | 5.1 | 0.17 |
| No. | Name                  | J2000.0               | $V_{LG}$ | ± | $T$ | $K$ | $R_\perp$ | log $L_\odot$ | $M_{L_K}/L_\odot$ | $M_*/L_\odot$ | log(II) |
|-----|-----------------------|-----------------------|----------|---|-----|-----|----------|----------------|-------------------|----------------|---------|
| 38  | UGC02497              | J030207.7−+290623     | 3265     | 5 | 8   | 11.31| 297      | 10.11           | 6.2              | 2.94             | 0.62    |
| 39  | NGC1196               | J030335.2−120435      | 3371     | 22| −2  | 9.60 | 111      | 10.90           | 25.4             | 18.5             | 0.26    |
| 40  | IC0285                | J030406.2−120056      | 3246     | 35| 3   | 10.87|          |                 |                  |                  |         |
| 41  | LCRS...               | J031049.7−414757      | 1253     | 74| 9   | 12.92| 41       | 8.76            | 379.6            | 0.24             |         |
| 42  | NGC1253               | J031409.0−024923      | 1723     | 6 | 6   | 9.23 | 27       | 10.42           | 16.7             | 16.4             | 1.23    |
| 43  | 2MASX...              | J031729.7−080843      | 2054     | 26| 5   | 13.05| 173      | 9.25            | 14.8             | 1.72             |         |
| 44  | SDSS...               | J031829.0−075331      | 2065     | 5 | 8   | 13.25|          |                 |                  |                  |         |
| 45  | UGCA071               | J032524.7−161416      | 1827     | 9 | 7   | 11.27| 39       | 9.63            | 1.4              | 0.2              | 0.54    |
| 46  | MCG...                | J032512.1−160950      | 1816     | 5 | 10  | 13.95|          |                 |                  |                  |         |
| 47  | IC1970                | J033631.5−435725      | 1085     | 5 | 3   | 9.08 | 103      | 10.06           | 1.0              | 0.23             |         |
| 48  | NGC1390               | J033752.2−190030      | 1142     | 12| 6   | 11.52| 171      | 9.20            | 0.0              | 0.57             |         |
| 49  | ESO548−065            | J034029.4−265144      | 1686     | 12| −2  | 9.63 | 35       | 10.20           | 4.2              | 0.24             |         |
| 50  | ESO482−032            | J034041.4−264711      | 1645     | 22| 7   | 12.66|          |                 |                  |                  |         |
| 51  | NGC1416               | J034102.9−224309      | 2077     | 24| −5  | 10.53| 133      | 10.05           | 59.9             | 0.03             |         |
| 52  | 2MASX...              | J034127.1−228223      | 2143     | 75| −4  | 13.42|          |                 |                  |                  |         |
| 53  | NGC1421               | J034229.3−132917      | 2033     | 9 | 4   | 8.37 | 288      | 11.02           | 19.7             | 19.1             | 0.34    |
| 54  | MCG...                | J034256.1−125459      | 2111     | 5 | 5   | 9.37 |          |                 |                  |                  |         |
| 55  | NGC1440               | J034502.9−181558      | 1458     | 27| −2  | 8.16 | 373      | 10.65           | 1.0              | 0.12             |         |
| 56  | ESO549−007            | J034411.5−191910      | 1448     | 11| 9   | 12.41|          |                 |                  |                  |         |
| 57  | IC0334                | J034517.1−763818      | 2762     | 7 | 2   | 7.62 | 963      | 11.41           | 5.2              | 3.8              | 0.58    |
| 58  | HFL3Z40AGO...         | J033724.9+751500      | 2727     | 9 | 10  | 14.11|          |                 |                  |                  |         |
| 59  | UGC02906              | J040101.0−740502      | 2837     | 28| 3   | 8.95 | 160      | 10.91           | 4.6              | 3.8              | 0.26    |
| 60  | HFL3Z40AGO...         | J040330.7+741503      | 2793     | 9 | 10  | 14.76|          |                 |                  |                  |         |
| 61  | NGC1527               | J040824.1−475349      | 815      | 38| −3  | 7.63 | 351      | 10.36           | 2.0              | 0.21             |         |
| 62  | AM0358−465            | J035956.4−464705      | 804      | 9 | 5   | 12.12|          |                 |                  |                  |         |
| 63  | NGC1533               | J040951.8−560706      | 582      | 20| −2  | 7.62 | 24       | 10.01           | 16.8             | 0.56             |         |
Table I: **Table.** (Contd.)

| No. | Name | J2000.0 | $V_{LG}$ | T | $K_{\perp}$ | $R_{\perp}$ | log $L_{\odot}$ | $M/L_{K}$ | $M/L_{K}$ | log($I$) |
|-----|------|---------|----------|---|------------|----------|-------------|-----------|-----------|---------|
| 57  | NGC1559 | J041735.8−624701 | 1072 | 6 | 6 | 8.01 | 249 | 10.44 | 0.8 | 0.24 |
| 58  | ESO084−015 | J042211.8−633640 | 1064 | 20 | 9 | 12.91 |        |        |        |        |
| 59  | IC2059 | J042026.3−314328 | 2653 | 27 | −2 | 9.89 | 458 | 10.57 | 25.6 | 15.5 | 0.72 |
| 60  | ESO050−024 | J042113.6−215046 | 782 | 6 | 7 | 10.06 | 121 | 9.36 | 0.6 | 0.82 |
| 61  | ESO050−023 | J042012.6−211439 | 785 | 9 | 8 | 14.63 |        |        |        |        |
| 62  | IC2038 | J040853.8−555922 | 505 | 52 | 7 | 14.10 |        |        |        |        |
| 63  | NGC1579 | J041735.8−624701 | 1072 | 6 | 6 | 8.01 | 249 | 10.44 | 0.8 | 0.24 |
| 64  | ESO084−015 | J042211.8−633640 | 1064 | 20 | 9 | 12.91 |        |        |        |        |
| 65  | IC2059 | J042026.3−314328 | 2653 | 27 | −2 | 9.89 | 458 | 10.57 | 25.6 | 15.5 | 0.72 |
| 66  | ESO050−024 | J042113.6−215046 | 782 | 6 | 7 | 10.06 | 121 | 9.36 | 0.6 | 0.82 |
| 67  | ESO050−023 | J042012.6−211439 | 785 | 9 | 8 | 14.63 |        |        |        |        |
| 68  | IC2038 | J040853.8−555922 | 505 | 52 | 7 | 14.10 |        |        |        |        |
| No. | Name          | J2000.0       | $V_{LG}$ | T | $K$ | $R_\perp$ | log $L/L_\odot$ | $M_{L_K}/L_\odot$ | $M_\star/L_\odot$ | log(II) |
|-----|---------------|---------------|----------|---|-----|-----------|----------------|-------------------|-----------------|---------|
| 76  | NGC2076       | J054646.7−164708 | 1982     | 8  | 1   | 8.94      | 313             | 10.60            | 2.4              | 0.57    |
| 77  | HIPASS...     | J054423.6−162652 | 1966     | 25 | 8   | 13.72     |                 |                  |                  |         |
| 77  | NGC2101       | J054704.7−513311 | 914      | 10 | 9   | 10.56     | 121             | 9.34             | 50.6            | 38.4    | 1.13   |
| 78  | NGC2106       | J055046.6−213402 | 1724     | 6  | 2   | 9.11      | 407             | 10.42            | 10.5            | 4.7     | 0.83   |
| 79  | 2MASX...      | J054305.9−204014 | 2950     | 74 | 0   | 12.14     |                 |                  |                  |         |
| 79  | IC0438        | J055300.1−175234 | 2939     | 6  | 5   | 9.68      | 91              | 10.76            | 0.2             | 0.05    |
| 80  | IC2153...     | J050004.2−335512 | 2617     | 15 | 5   | 11.25     | 3               | 10.15            | 0.1             | 0.61    |
| 81  | IC0441        | J060242.6−122957 | 2047     | 5  | 5   | 10.74     | 232             | 10.20            | 2.2             | 0.4     | 1.68   |
| 82  | ESO425−014    | J061302.7−274347 | 2718     | 28 | −3  | 9.38      | 595             | 10.75            | 32.1            | 1.05    |
| 83  | NGC2211       | J061830.4−183214 | 1784     | 20 | −2  | 9.36      | 12              | 10.39            | 0.7             | 0.3     | 0.15   |
| 84  | NGC2221       | J062015.7−573442 | 2262     | 50  | 3   | 10.05     | 26              | 10.40            | 6.1             | 2.8     | 0.49   |
| 85  | NGC2222       | J062016.1−573151 | 2332     | 11  | 4   | 11.39     |                 |                  |                  |         |
| 86  | UGC03445      | J062132.8+590736 | 3241     | 22  | 2   | 8.60      | 10              | 11.35            | 0.1             | 0.82    |
| 86  | UGC03446      | J062138.9−590733 | 3291     | 35  | 1   | 9.38      |                 |                  |                  |         |
| 87  | NGC2233       | J062435.9−225018 | 2502     | 19  | 4   | 8.83      | 128             | 10.90            | 60.2            | 19.6    | 0.27   |
| 88  | 6dF...        | J062534.5−282716 | 2597     | 74  | −1  | 10.90     | 193             | 10.30            | 101.9           | 1.11    |
| 89  | ESO426−010    | J062639.3−283952 | 2503     | 6   | 3   | 11.12     |                 |                  |                  |         |
| 89  | ESO426−001    | J064043.2−583128 | 2376     | 30  | 3   | 9.26      | 32              | 10.68            | 6.0             | 4.8     | 1.47   |
| 90  | ESO122−002    | J064046.6−582811 | 2463     | 18  | 5   | 12.09     |                 |                  |                  |         |
| 90  | NGC2273       | J065008.7+605045 | 1968     | 10  | 1   | 8.45      | 382             | 10.78            | 17.8            | 0.49    |
| 91  | MAILYAN017    | J064639.2+600845 | 1919     | 75  | 10  | 14.02     |                 |                  |                  |         |
| 92  | UGC03509      | J065455.4+853817 | 1865     | 46  | 2   | 11.20     | 77              | 9.65             | 77.8            | 70.9    | 0.44   |
| 92  | UGC03496      | J065036.0+854742 | 1804     | 5   | 10  | 15.04     |                 |                  |                  |         |
| 93  | UGC03647      | J070450.4+563113 | 1488     | 5   | 10  | 12.12     | 44              | 9.28             | 0.7             | 0.95    |
| 93  | CGGC...       | J070359.2+562911 | 1493     | 25  | 10  | 12.73     |                 |                  |                  |         |
| 94  | NGC2337       | J070508.3+442726 | 1664     | 74  | 8   | 10.31     | 20              | 8.82             | 5.3             | 1.6     | 0.83   |
| No. | Name                     | J2000.0          | $V_{LG}$ | $T$ | $K$ | $R_\perp$ | log $L$ | $M/L_K$ | $M/L_K$ | log($II$) |
|-----|--------------------------|------------------|----------|-----|-----|-----------|---------|---------|---------|-----------|
| 95  | UGC03730...              | J071420.6+732850 | 2897     | 18  | 2   | 10.78     | 106     | 10.41   | 6.6     | 2.6       | 0.89      |
| 96  | NGC2268                  | J071417.4+842256 | 2440     | 5   | 4   | 8.56      | 391     | 10.94   | 41.4    | 40.8      | 0.26      |
| 97  | UGC03522                 | J065606.1+845504 | 2352     | 5   | 10  | 12.12     |         |         |         |           |           |
| 98  | UGC03788                 | J071825.9+313340 | 3443     | 7   | 4   | 11.15     | 142     | 10.29   | 0.5     | 0.68      |           |
| 99  | UGC03790...              | J071930.9+592118 | 3396     | 58  | 2   | 9.49      | 60      | 10.88   | 13.6    | 12.5      | 0.18      |
| 100 | NGC2276                  | J072714.4+854516 | 2632     | 12  | 5   | 9.68      | 111     | 10.70   | 31.3    | 27.4      | 0.53      |
| 101 | IC2202                   | J072754.7−673427 | 3327     | 6   | 4   | 9.40      | 566     | 10.96   | 0.0     | 0.21      |           |
| 102 | ESO058−028               | J072034.0−674239 | 3324     | 10  | 7   | 10.97     |         |         |         |           |           |
| 103 | UGC03864                 | J073057.0+723102 | 2737     | 50  | 5   | 12.40     | 5       | 9.51    | 1.0     | 0.55      |           |
| 104 | VV141b                   | J073054.8+73037  | 2714     | 75  | 10  | 15.83     |         |         |         |           |           |
| 105 | UGC03974                 | J074155.4+164809 | 162      | 10  | 5   | 11.40     | 11      | 7.54    | 11.7    | 1.69      |           |
| 106 | CGCG...                  | J074322.0+163340 | 168      | 10  | 10  | 13.11     |         |         |         |           |           |
| 107 | ESO035−018               | J075504.2−762445 | 1492     | 5   | 5   | 9.76      | 288     | 10.04   | 4.6     | 0.73      |           |
| 108 | ESO035−020               | J080318.6−770419 | 1479     | 9   | 9   | 13.15     |         |         |         |           |           |
| 109 | UGC04159                 | J080151.2+612447 | 1703     | 8   | 9   | 11.50     | 37      | 9.60    | 0.0     | 0.50      |           |
| 110 | UGC04169                 | J080234.1+612253 | 1701     | 5   | 9   | 12.42     |         |         |         |           |           |
| 111 | UGC04151                 | J080418.7+774860 | 2473     | 5   | 6   | 10.39     | 276     | 10.30   | 3.2     | 1.6       | 0.70      |
| 112 | UGC04066                 | J075615.6+780048 | 2487     | 5   | 8   | 12.09     |         |         |         |           |           |
| 113 | ESO124−014               | J075912.7−613937 | 2708     | 20  | −3  | 9.29      | 231     | 10.93   | 7.7     | 1.54      |           |
| 114 | IRAS...                  | J080852.5−611835 | 2756     | 44  | 3   | 10.00     |         |         |         |           |           |
| 115 | LCSBS1123P               | J081715.9+245357 | 1832     | 5   | 9   | 13.68     | 29      | 8.75    | 41.0    | 0.88      |           |
| 116 | KUG0814...               | J081721.0+245746 | 1806     | 70  | 9   | 14.99     |         |         |         |           |           |
| 117 | CGCG...                  | J081725.4+210950 | 2054     | 9   | 8   | 13.12     | 10      | 9.24    | 5.9     | 0.46      |           |
| 118 | CGCG...                  | J081728.1+211052 | 2024     | 75  | 4   | 13.20     |         |         |         |           |           |
| 119 | IC2267                   | J081801.5+244411 | 1962     | 10  | 6   | 11.84     | 29      | 9.57    | 11.2    | 9.4       | 0.75      |
| 120 | IC2268                   | J081806.6+244747 | 1928     | 5   | 9   | 12.90     |         |         |         |           |           |
| 121 | NGC2549                  | J081858.3+574811 | 1154     | 22  | −2  | 8.02      | 127     | 10.51   | 0.5     | 0.50      |           |
| 122 | UGC04314                 | J081857.8+581547 | 1164     | 7   | 9   | 12.24     |         |         |         |           |           |
| 123 | 6dF...                   | J082142.8−002601 | 1612     | 74  | 10  | 12.88     | 27      | 8.97    | 1.2     | 1.93      |           |
| 124 | UGC04358                 | J082126.0−002508 | 1606     | 6   | 10  | 14.03     |         |         |         |           |           |
| 125 | SAO0822+3545             | J082605.6+353526 | 671      | 50  | 10  | 15.02     | 10      | 7.48    | 133.2   | 1.57      |           |
| No. | Name       | J2000.0                  | $V_{LG}$ ± T | $K$ | $R_{⊥}$ | log $L_L$ | $M_L^\odot$ | $M_I^\odot$ | log(II) |
|-----|------------|--------------------------|--------------|-----|---------|-----------|-------------|-------------|---------|
| 114 | UGC04393   | J082604.4+455804          | 2156 12      | 6   | 11.21  | 116       | 9.83        | 10.8       | 7.6     | 0.61   |
| 115 | MCG...     | J082718.1+460200          | 2179 5       | 9   | 13.37  |           |             |            |         |        |
| 116 | NGC2607    | J083356.6+265821          | 3452 9       | 6   | 12.02  | 137       | 9.89        | 55.9       | 0.90    |        |
| 117 | SDSS...    | J083326.0+265114          | 3503 37      | 8   | 15.03  |           |             |            |         |        |
| 118 | NGC2619    | J083732.7+284219          | 3408 5       | 5   | 9.59   | 573       | 10.93       | 0.3       | 0.90    |        |
| 119 | UGCA147    | J084017.6+300709          | 2024 6       | 3   | 10.01  | 284       | 10.19       | 0.0       | 0.66    |        |
| 120 | NGC2683    | J084722.7+493331          | 3089 45      | 2   | 10.14  | 317       | 10.52       | 20.5      | 0.37    |        |
| 121 | UGC04521   | J084955.0+494013          | 3132 21      | 8   | 14.61  |           |             |            |         |        |
| 122 | KUG0847... | J085011.8+350436          | 2264 8       | 2   | 10.41  | 119       | 10.15       | 28.1      | 0.17    |        |
| 123 | SDSS...    | J085152.7+293243          | 2025 8       | 9   | 15.57  |           |             |            |         |        |
| 124 | UGC04587   | J085472.7+493331          | 3089 45      | 2   | 10.14  | 317       | 10.52       | 20.5      | 0.37    |        |
| 125 | UGC04621   | J085501.8+350436          | 2264 8       | 2   | 10.41  | 119       | 10.15       | 28.1      | 0.17    |        |
| 126 | 2MASX...   | J085152.7+175116          | 1675 74      | 7   | 12.84  |           |             |            |         |        |
| 127 | NGC2684    | J085241.4+332519          | 366 5        | 3   | 6.32   | 35        | 10.25       | 6.9       | 6.7     | 0.53   |
| 128 | SBS0849+496| J085534.7+584404          | 966 7        | −1  | 8.33   | 109       | 10.25       | 20.2      | 19.4    | 1.14   |
| 129 | UGC04683   | J085554.4+590458          | 1018 5       | 10  | 13.95  |           |             |            |         |        |
| 130 | 2MASX...   | J085828.2−184717          | 3260 74      | −1  | 10.81  | 157       | 10.28       | 155.6     | 1.10    |        |
| 131 | ESO564−003 | J085902.9−188306          | 3134 97      | 8   | 14.97  |           |             |            |         |        |
| 132 | UGC04703...| J085829.8+061917          | 3373 7       | 9   | 13.10  | 20        | 9.47        | 3.0       | 0.23    |        |
| 133 | UGC04703...| J085825.0+062006          | 3353 23      | 10  | 14.97  |           |             |            |         |        |
| 134 | NGC2721    | J085856.5−045407          | 3483 6       | 4   | 9.71   | 63        | 10.77       | 17.0      | 16.0    | 0.51   |
| 135 | FGC0821    | J085914.4−045249          | 3367 14      | 8   | 14.84  |           |             |            |         |        |
| 136 | NGC2701    | J085905.7+534618          | 2392 5       | 5   | 9.67   | 317       | 10.48       | 23.1      | 21.8    | 0.95   |
| 137 | SDSS...    | J085618.6+540818          | 2435 5       | 8   | 15.08  |           |             |            |         |        |
| 138 | UGC04730   | J090158.4+600906          | 3377 63      | 0   | 10.37  | 25        | 10.49       | 1.8       | 1.65    |        |
| 139 | UGC04727   | J090143.9+600927          | 3333 75      | 6   | 15.09  |           |             |            |         |        |
| 140 | ESO564−011 | J090246.2−204331          | 2498 9       | 0   | 10.46  | 7         | 10.30       | 4.3       | 0.50    |        |
| 141 | ESO564−010 | J090244.9−204251          | 2598 74      | 10  | 12.12  |           |             |            |         |        |
| No. | Name                  | J2000.0       | $V_{LG}$ $\pm$ T | K | $R_{\perp}$ | log $L_{\odot}$ | $M_{L_K}$ $\odot$ | $M_{L_K}$ $\odot$ | log($II$) |
|-----|----------------------|---------------|-----------------|---|------------|----------------|--------------------|--------------------|-----------|
| 133 | UGC04612             | J090018.6+853156 | 1820 11 9 14.33 |   |            |                |                    |                    |           |
| 134 | KUG0901...           | J090440.1+472415 | 2310 35 4 13.34 123 | 9.16 | 340.3    |            |                    |                    | 1.80      |
| 135 | SDSS...              | J090311.1+473028 | 2368 67 9 14.15 |   |            |                |                    |                    |           |
| 136 | ESO564−019           | J090527.5−183130 | 1730 74 4 11.30 211 | 9.81 | 90.6     |            |                    |                    | 0.48      |
| 137 | NGC2758              | J090512.2−192234 | 1682 5 4 11.40 |   |            |                |                    |                    |           |
| 138 | NGC2772              | J090714.9−233717 | 3139 5 3 9.33 7 10.86 0.5 0.4 0.91 | | | | | | |
| 139 | ESO−LV...            | J090741.9−233749 | 3205 15 10 15.28 |   |            |                |                    |                    |           |
| 140 | UGC04809             | J090920.3+204150 | 2907 8 6 11.97 91 | 9.22 | 18.3 13.3 |            |                    |                    | 0.91      |
| 141 | UGCA150              | J091023.5+192719 | 3007 10 −1 11.43 | 44 | 10.02 |            |                    |                    | 0.80      |
| 142 | 2MASX...             | J091038.5+192823 | 3005 5 8 13.72 |   |            |                |                    |                    |           |
| 143 | NGC2784              | J091219.5−241021 | 407 35 −2 6.24 132 | 10.34 7.0 3.4 |            |                    |                    | 0.21      |
| 144 | ESO497−017           | J091232.6+314828 | 1859 9 6 12.78 | 65 | 9.08 | 14.2 5.4 |            |                    | 0.58      |
| 145 | IC2445               | J091251.7+314051 | 1844 5 8 14.70 |   |            |                |                    |                    |           |
| 146 | UGC04850             | J091340.9+331930 | 3374 42 5 13.16 | 128 | 9.63 | 0.0 |            |                    | 0.85      |
| 147 | NGC2785              | J091304.6+332517 | 3375 20 8 13.43 |   |            |                |                    |                    |           |
| 148 | ESO497−029           | J091358.4+305033 | 2728 10 7 9.41 | 81 | 10.69 6.5 | 6.2 |            |                    | 0.21      |
| 149 | ESO497−028           | J091435.6+305254 | 3261 6 7 14.58 |   |            |                |                    |                    |           |
| 150 | NGC2811              | J091515.4+045503 | 3134 14 6 11.76 | 113 | 10.03 0.0 | 0.0 |            |                    | 0.91      |
| 151 | IC0529               | J091611.1−161846 | 2099 29 1 7.96 | 165 | 11.02 44.9 | 4.5 |            |                    | 0.61      |
| 152 | NGC2815              | J091619.8−233760 | 2528 8 3 8.20 | 125 | 11.03 7.1 | 4.9 | 0.04 |            |           |
| 153 | NGC2815:...          | J091547.6−232628 | 2330 20 9 14.93 |   |            |                |                    |                    |           |
| 154 | IC0529               | J091832.8+734534 | 2422 5 5 9.47 | 275 | 10.62 3.9 | 0.43 |            |                    |           |
| 155 | NGC2817              | J091918.6+691212 | 838 5 −1 7.21 | 187 | 10.51 41.0 | 39.8 |            |                    | 0.28      |
| 156 | UGC04998             | J092511.0+682259 | 761 7 10 13.16 |   |            |                |                    |                    |           |
| 157 | NGC2858              | J092255.0+030925 | 3446 32 0 9.80 | 93 | 10.76 0.4 | 0.21 |            |                    |           |
| 158 | 2MASX...             | J092234.1+030501 | 3432 36 −1 12.91 |   |            |                |                    |                    |           |
| 159 | NGC2852              | J092314.6+400950 | 1778 25 1 10.09 | 16 | 10.16 0.5 | 0.39 |            |                    |           |
| 160 | NGC2853              | J092317.3+401200 | 1758 30 4 11.41 |   |            |                |                    |                    |           |
| 161 | UGC04984             | J092339.7+542900 | 3452 63 9 13.50 | 165 | 9.36 318.8 | 1.61 |            |                    |           |
| No. | Name           | J2000.0          | $V_{LG}$ | ± | T | $K$ | $R_{\perp}$ | log $L$ | $M_{L\perp}$ | $M_{L\perp}^{\odot}$ | log($II$) |
|-----|----------------|------------------|----------|---|---|-----|------------|--------|-------------|---------------------|-----------|
| 152 | ESO498—003     | J092336.5—265255 | 2070     | 10| 3 | 9.73 | 54         | 10.35  | 6.6         | 0.35                |
| 153 | NGC2891        | J092656.6—244659 | 2067     | 20| -3| 9.52 | 300        | 10.61  | 25.9        | 6.9                 | 0.46      |
| 154 | ESO498—005     | J092440.7—250534 | 2121     | 25| 4 | 10.17|            |        |             |                     |
| 155 | MCG...         | J093612.4—082604 | 1701     | 59| 4 | 9.76 | 175        | 10.17  | 6.3         | 0.74                |
| 156 | NGC2979        | J094308.7—102260 | 2451     | 31| 1 | 9.50 | 257        | 10.70  | 0.0         | 0.98                |
| 157 | NGC2983        | J094434.1—202838 | 1767     | 45| -1| 8.52 | 94         | 10.66  | 5.9         | 0.41                |
| 158 | NGC3020        | J095006.6+124849 | 1283     | 5 | 6 | 10.67| 30         | 9.74   | 3.6         | 3.0                 | 1.23      |
| 159 | UGC05272       | J095022.4+312916 | 460      | 5 | 10| 12.01| 4          | 8.14   | 2.8         | 0.86                |
| 160 | NGC3032        | J095208.2+291410 | 1472     | 12| -2| 9.64 | 70         | 10.09  | 54.0        | 52.6                | 0.46      |
| 161 | KUG0950...     | J095257.6+291837 | 1561     | 7 | 8 | 15.77|            |        |             |                     |
| 162 | NGC3044        | J095340.9+013447 | 1115     | 34| 6 | 8.97 | 29         | 10.11  | 7.4         | 3.2                 | 0.72      |
| 163 | APMUKS...      | J095404.6+013224 | 1168     | 20| 10| 17.94|            |        |             |                     |
| 164 | NGC3043        | J095614.8+591826 | 3082     | 15| 5 | 10.45| 256        | 10.40  | 0.1         | 0.45                |
| 165 | SBS0953+592    | J095722.4+585929 | 3085     | 5 | 9 | 14.46|            |        |             |                     |
| 166 | NGC3065        | J100155.3+721013 | 2160     | 10| 0 | 8.97 | 26         | 10.83  | 2.0         | 0.9                 | 0.45      |
| 167 | NGC3107        | J100423.5+191037 | 1958     | 10| 1 | 10.32| 67         | 10.03  | 47.9        | 47.1                | 1.58      |
| 168 | NGC3124        | J100639.9—191318 | 3285     | 5 | 4 | 9.07 | 152        | 10.99  | 13.6        | 7.0                 | 0.13      |
| 169 | NGC3118        | J100711.6+330140 | 1291     | 5 | 4 | 11.66| 51         | 9.25   | 56.1        | 0.71                |
| 170 | ESO567—018     | J100726.2—212836 | 3307     | 30| 3 | 10.86| 346        | 10.39  | 28.7        | 0.50                |
Table I: Table. (Contd.)

| No. | Name            | J2000.0       | $V_{LG}$ | T    | $K_0$ | $R_\perp$ | $\log L/L_\odot$ | $\log M/L_\odot$ | $\log(II)$ |
|-----|-----------------|---------------|----------|------|-------|-----------|-------------------|-----------------|-------------|
|     |                 |               | ± kpc   |      | mag   | kpc       |                   |                 |             |
| 171 | IC0591          | J100727.7+121628 | 2659 12 | 4    | 11.25 | 242       | 10.08             | 15.1            | 9.5          |
|     | UGC05454        | J100711.0+123905 | 2634 5  | 9    | 12.18 |           |                   |                 | 0.40         |
| 172 | CGCG...         | J100757.1+131339 | 2605 11 | 6    | 12.34 | 96        | 9.54              | 12.5            | 7.5          |
|     | SDSS...         | J100733.2+130624 | 2585 5  | 9    | 14.28 |           |                   |                 | 0.07         |
| 173 | MCG...          | J100903.3−111360 | 3216 33 | -2   | 9.78  | 37        | 10.80             | 42.7            | 29.2         |
|     | 2MASX...        | J100906.5−111119 | 3462 74 | 0    | 11.61 |           |                   |                 |             |
| 174 | IC0598          | J101248.6+430844 | 2263 13 | 2    | 10.14 | 168       | 10.24             | 20.2            | 1.25         |
|     | KUG1008...      | J101152.9+432432 | 2222 31 | 9    | 14.62 |           |                   |                 |             |
| 175 | NGC3153         | J101250.5+124000 | 2656 5  | 6    | 10.60 | 354       | 10.20             | 10.2            | 0.65         |
|     | SDSS...         | J101033.9+123540 | 2636 11 | 8    | 14.98 |           |                   |                 |             |
| 176 | IC2558          | J101444.1−342019 | 2292 35 | 7    | 11.09 | 180       | 9.91              | 3.1             | 0.05         |
|     | ESO375−003      | J101553.8−340653 | 2303 9  | 9    | 13.68 |           |                   |                 |             |
| 177 | ESO500−018      | J101453.7−230302 | 3409 27 | -2   | 9.64  | 358       | 10.79             | 73.9            | 0.25         |
|     | 2MASX...        | J101426.8−230904 | 3305 74 | 4    | 13.80 |           |                   |                 |             |
| 178 | UGC05541        | J101655.4+582342 | 2344 5  | 10   | 13.52 | 84        | 9.00              | 46.2            | 36.3         |
|     | SDSS...         | J101712.2+583225 | 2366 5  | 9    | 15.21 |           |                   |                 | 0.49         |
| 179 | IC0600          | J101710.9−032952 | 1082 5  | 8    | 11.70 | 4         | 8.97              | 31.4            | 25.9         |
|     | LCRS...         | J101712.7−032901 | 1003 17 | 10   | 14.58 |           |                   |                 | 1.37         |
| 180 | NGC3184         | J101817.0+412528 | 589 5  | 6    | 7.22  | 394       | 10.25             | 1.1             | 0.09         |
|     | NGC3104         | J100357.4+404525 | 595 7  | 10   | 11.19 |           |                   |                 |             |
| 181 | ESO567−052      | J102008.0−214143 | 3251 27 | -2   | 10.83 | 21        | 10.47             | 3.5             | 0.29         |
|     | ESO567−053      | J102008.9−214319 | 3187 59 | 4    | 11.43 |           |                   |                 |             |
| 182 | NGC3206         | J102147.6+565550 | 1239 5  | 6    | 11.15 | 85        | 9.54              | 16.1            | 0.38         |
|     | NGC3220         | J102344.7+570137 | 1262 16 | 6    | 11.59 |           |                   |                 |             |
| 183 | UGC05646        | J102553.1+142147 | 1223 5  | 5    | 10.94 | 145       | 9.49              | 13.7            | 8.2          |
|     | UGC05633        | J102440.1+144526 | 1239 5  | 8    | 12.42 |           |                   |                 | 1.01         |
| 184 | NGC3246         | J102641.8+035143 | 1957 23 | 8    | 10.72 | 301       | 9.90              | 1.5             | 1.44         |
|     | VIIIZw 081      | J102848.1+041405 | 1951 5  | 9    | 14.15 |           |                   |                 |             |
| 185 | UGC05707        | J103114.3+430815 | 2807 5  | 6    | 14.03 | 32        | 9.05              | 55.8            | 52.5         |
|     | SDSS...         | J103118.6+430534 | 2848 5  | 9    | 14.80 |           |                   |                 | 2.14         |
| 186 | IC2594          | J103604.2−241923 | 3265 20 | -3   | 9.32  | 120       | 11.03             | 0.1             | 0.08         |
|     | ESO501−024      | J103527.2−242303 | 3274 28 | -1   | 10.37 |           |                   |                 |             |
| 187 | NGC3294         | J103616.3+371929 | 1556 14 | 5    | 8.38  | 150       | 10.66             | 49.8            | 30.8         |
|     | KUG1032...      | J103522.8+374018 | 1669 35 | 9    | 12.91 |           |                   |                 | 0.73         |
| 188 | NGC3301         | J103656.0+215256 | 1240 17 | -1   | 8.51  | 160       | 10.47             | 10.9            | 8.7          |
|     | NGC3287         | J103447.3+213854 | 1199 5  | 8    | 9.77  |           |                   |                 | 0.22         |
| 189 | NGC3306         | J103710.2+123909 | 2738 5  | 8    | 10.40 | 325       | 10.33             | 18.7            | 15.3         |
|     |                 |                |         |      |       |           |                   |                 | 0.47         |
| No. | Name                  | J2000.0            | $V_{LG}$ | $T$ | $K$ | $R_\perp$ | log $L$ | $M_{L_{K}}$ | $M_{L_{K}}$ | log(II) |
|-----|-----------------------|--------------------|----------|-----|-----|-----------|--------|-------------|-------------|---------|
| 190 | IC0630                | J103833.8−071015   | 1930     | 10  | 9   | 8.63      | 85.70  | 30.9        | 0.40        |
|     | MRK1258               | J103800.4−071802   | 1806     | 75  | 9   | 11.84     |         |             |             |
| 191 | NGC3320               | J103936.5+472353   | 2353     | 7   | 4   | 10.09     | 356.10 | 10.8        | 0.78        |
|     | SDSS...               | J104309.7+471258   | 2375     | 19  | 7   | 15.00     |         |             |             |
| 192 | 6dF...                | J104011.8−095640   | 2218     | 74  | 6   | 13.43     | 128.90 | 221.4       | 0.90        |
|     | 6dF...                | J103930.4−094609   | 2177     | 74  | 9   | 14.18     |         |             |             |
| 193 | AM1039−313...         | J104120.7−314855   | 2388     | 74  | 0   | 10.58     | 24.25  | 8.1         | 0.50        |
|     | ESO437−042            | J104127.7−314649   | 2317     | 18  | 5   | 11.49     |         |             |             |
| 194 | ESO568−021            | J104115.2−210123   | 3322     | 75  | 3   | 11.15     | 385.26 | 73.0        | 0.60        |
|     | ESO568−023            | J104248.5−204147   | 3268     | 14  | 7   | 12.67     |         |             |             |
| 195 | ESO569−001            | J104409.1−204809   | 3375     | 37  | 2   | 11.02     | 14.28  | 16.0        | 0.19        |
|     | 2MASX...              | J104409.7−204910   | 3511     | 74  | 5   | 13.80     |         |             |             |
| 196 | NGC3329               | J104439.4+764834   | 2113     | 27  | 3   | 9.40      | 60.10  | 27.3        | 1.12        |
|     | UGC05841              | J104456.0+764117   | 2004     | 83  | 5   | 11.93     |         |             |             |
| 197 | NGC3348               | J104710.0+725023   | 2993     | 27  | 5   | 7.94      | 299.11 | 20.2        | 11.4        |
|     | NGC3364               | J104829.8+722530   | 2874     | 41  | 5   | 10.10     |         |             |             |
| 198 | UGC05897              | J104741.5+110437   | 2575     | 16  | 5   | 10.25     | 116.42 | 22.5        | 21.0        |
|     | CGCG...               | J104753.9+105352   | 2640     | 5   | 6   | 11.72     |         |             |             |
| 199 | NGC3398               | J105131.4+552328   | 2943     | 75  | 3   | 10.76     | 388.25 | 100.8       | 0.77        |
|     | MCG...                | J104835.3+554442   | 3006     | 37  | 9   | 14.02     |         |             |             |
| 200 | NGC3434               | J105158.0+034731   | 3445     | 9   | 3   | 9.74      | 37.10  | 1.4         | 1.3         |
|     | CGCG...               | J105200.2+035010   | 3402     | 5   | 8   | 13.61     |         |             |             |
| 201 | NGC3432               | J105231.1+363708   | 589      | 5   | 9   | 9.06      | 158.95 | 3.1         | 0.70        |
|     | CGCG...               | J105747.0+361539   | 596      | 17  | 10  | 13.32     |         |             |             |
| 202 | CGCG...               | J105248.6+000204   | 1607     | 5   | 9   | 12.97     | 25.82  | 65.3        | 0.91        |
|     | MCG0013223            | J105240.6+000117   | 1569     | 75  | 10  | 16.40     |         |             |             |
| 203 | LSBC...               | J105318.6+023734   | 851      | 10  | 9   | 13.45     | 30.17  | 18.9        | 0.50        |
|     | LSBC...               | J105303.1+022937   | 860      | 5   | 10  | 14.89     |         |             |             |
| 204 | NGC3448               | J105439.2+541819   | 1448     | 27  | 3   | 9.47      | 24.10  | 26.5        | 25.7        |
|     | UGC06016              | J105412.8+541714   | 1564     | 10  | 10  | 14.60     |         |             |             |
| 205 | ESO376−027            | J105658.2−330952   | 3436     | 53  | 5   | 11.84     | 41.08  | 6.1         | 3.0         |
|     | ESO−LV...             | J105659.1−330939   | 3560     | 40  | 7   | 12.92     |         |             |             |
| 206 | ESO569−030            | J105824.2−190912   | 3257     | 30  | 4   | 13.06     | 62.95  | 64.5        | 0.08        |
|     | 2MASX...              | J105844.2−190931   | 3314     | 74  | 4   | 13.82     |         |             |             |
| 207 | UGC06074              | J105958.3+505411   | 2946     | 5   | 9   | 10.57     | 41.30  | 0.1         | 1.41        |
|     | MCG...                | J110006.4+505056   | 2952     | 5   | 8   | 14.03     |         |             |             |
| 208 | BTS029                | J110138.9+303629   | 1626     | 5   | 10  | 14.08     | 12.61  | 240.3       | 0.80        |
| No. | Name          | J2000.0       | $V_{LG}$ $\pm$ T km s$^{-1}$ | T mag | $K_{R}$ mag | $R_{\perp}$ kpc | log $L_{\odot}$ | $M_{L_K}$ $\odot$ | $M_{M_K}$ $\odot$ | log($II$) |
|-----|---------------|---------------|-------------------------------|-------|-------------|-----------------|-----------------|-----------------|-----------------|-----------|
| 209 | NGC3504       | J110311.2+275821 | 1467 8 | 2 | 8.26 | 67 10.67 | 42.7 | 42.4 | 0.15 |
|     | NGC3512       | J110403.0+280213 | 1307 7 | 5 | 9.64 |                |              |                |                |           |
| 210 | NGC3547       | J110955.9+104315 | 1428 5 | 3 | 10.43 | 59 9.76 | 20.2 | 0.36 |
|     | CGCG...       | J110923.3+105003 | 1387 79 | 12.64 |                |              |                |                |           |
| 211 | NGC3543       | J111056.4+612049 | 1779 5 | 4 | 11.40 | 200 9.56 | 1.2 | 0.57 |
|     | [HS98]137A    | J1110718.0+613127 | 1783 5 | 10 | 14.20 |                |              |                |           |
| 212 | NGC3549       | J111056.9+532316 | 2932 5 | 5 | 9.18 | 370 10.86 | 0.0 | 0.64 |
|     | CGCG...       | J111350.5+530511 | 2934 40 | 7 | 13.13 |                |              |                |           |
| 213 | NGC3544       | J111130.5−181722 | 3465 20 | 1 | 8.97 | 66 11.07 | 5.1 | 2.7 | 0.24 |
|     | NGC3571...    | J111119.6−181315 | 3378 30 | 8 | 14.15 |                |              |                |           |
| 214 | ESO377−019    | J111045.4−352102 | 2699 11 | 7 | 11.11 | 327 10.23 | 121.8 | 0.13 |
|     | 2MASX...      | J111252.5−353614 | 2772 74 | 6 | 11.58 |                |              |                |           |
| 215 | CGCG...       | J111540.4+460739 | 2901 5 | 9 | 13.31 | 23 9.25 | 17.7 | 16.1 | 0.75 |
|     | SDSS...       | J111550.5+460638 | 2934 5 | 9 | 15.41 |                |              |                |           |
| 216 | UGC06309      | J111746.5+512386 | 2931 6 | 4 | 10.57 | 40 10.30 | 12.3 | 12.0 | 0.39 |
|     | MRK1445       | J111732.3+512553 | 2860 5 | 9 | 14.23 |                |              |                |           |
| 217 | NGC3617       | J111750.9−260804 | 1886 8 | −4 | 9.76 | 43 10.25 | 38.4 | 38.1 | 0.78 |
|     | ESO503−011    | J111744.4−260223 | 1770 5 | 6 | 12.08 |                |              |                |           |
| 218 | NGC3621       | J111816.5−324851 | 437 5 | 7 | 6.57 | 317 10.21 | 18.2 | 10.8 | 0.80 |
|     | HIPASS...     | J113311.1−325745 | 409 9 | 9 | 13.65 |                |              |                |           |
| 219 | NGC3614       | J111821.3+454454 | 2366 14 | 5 | 9.63 | 34 10.47 | 4.5 | 0.36 |
|     | SDSS...       | J111826.7+454124 | 2308 35 | 9 | 15.47 |                |              |                |           |
| 220 | UGC06355      | J112039.8+311320 | 2142 5 | 6 | 12.52 | 23 9.38 | 13.8 | 1.46 |
|     | 2MASX...      | J112046.0+311059 | 2107 30 | 9 | 13.44 |                |              |                |           |
| 221 | NGC3631       | J112102.9+531011 | 1227 7 | 5 | 7.98 | 150 10.64 | 12.9 | 11.7 | 0.13 |
|     | NGC3657       | J112355.6+525515 | 1283 9 | −1 | 10.28 |                |              |                |           |
| 222 | UGC06402      | J112319.1−005521 | 2412 5 | 8 | 11.21 | 80 9.89 | 14.7 | 4.2 | 1.70 |
|     | SDSS...       | J112344.8−005011 | 2446 15 | 10 | 14.49 |                |              |                |           |
| 223 | NGC3687       | J112800.6+293039 | 2453 12 | 4 | 10.23 | 7 10.23 | 40.5 | 39.9 | 1.46 |
|     | 2MASX...      | J112804.2+293038 | 2168 18 | 9 | 14.38 |                |              |                |           |
| 224 | NGC3694       | J112854.1+352450 | 2254 27 | 1 | 10.39 | 280 10.14 | 60.8 | 57.0 | 0.86 |
|     | UGC06499      | J113011.3+355208 | 2204 5 | 10 | 14.56 |                |              |                |           |
| 225 | NGC3705       | J113007.5+091636 | 868 5 | 2 | 7.90 | 190 10.31 | 2.6 | 0.14 |
|     | IC2828        | J112710.9+084352 | 883 12 | 9 | 12.64 |                |              |                |           |
| 226 | SBS1129+576   | J113202.5+572246 | 1660 5 | 8 | 14.48 | 23 8.44 | 19.9 | 0.09 |
|     | SDSS...       | J113227.7+572142 | 1646 33 | 9 | 15.02 |                |              |                |           |
| 227 | IC0705        | J113256.3+501430 | 3005 42 | −1 | 11.41 | 175 10.01 | 65.6 | 37.7 | 0.00 |

Table I: Table. (Contd.)
| No. | Name                  | J2000.0          | \( V_{LG} \) ± T | \( K \) | \( R_\perp \) | \( \log L \) | \( M/L_K \) | \( M_\Sigma/K \) | log(II) |
|-----|-----------------------|------------------|------------------|-------|------------|-------------|------------|-------------|---------|
| 228 | UGC06535              | J113313.4+501808 | 3209 ± 6         | 15.20 | 116        | 9.72        | 101.0      | 0.00        |         |
| 229 | UGC06538              | J113311.9+491705 | 3131 ± 10        | 13.59 | 44         | 9.25        | 52.5       | 0.38        |         |
| 230 | SDSS...               | J113342.7+482005 | 3094 ± 9         | 15.41 | 114        | 8.64        | 51.1       | 0.78        |         |
| 231 | NGC3731               | J113411.7+123044 | 3079 ± 5         | 10.27 | 300        | 10.46       | 3.1        | 0.76        |         |
| 232 | UGC06570              | J113550.0+352007 | 1580 ± 10        | 10.72 | 179        | 9.75        | 51.4       | 46.5       | 0.20    |
| 233 | NGC3755               | J113648.0+541737 | 1369 ± 5         | 8.77  | 323        | 10.38       | 22.5       | 0.37        |         |
| 234 | NGC3756               | J113956.3+165718 | 3100 ± 9         | 12.22 | 27         | 9.93        | 0.7        | 0.23        |         |
| 235 | ESO266−015            | J114055.7−442853 | 2886 ± 5         | 9.70  | 68         | 10.65       | 0.1        | 0.20        |         |
| 236 | KUG1138...            | J114107.4+322537 | 1704 ± 10        | 14.13 | 45         | 8.68        | 45.0       | 0.75        |         |
| 237 | MRK0746               | J114129.9+322059 | 1684 ± 5         | 14.17 |           |             |            |             |         |
| 238 | NGC3818               | J114157.4−060920 | 1493 ± 7         | 8.85  | 128        | 10.43       | 3.6        | 2.4         | 0.58    |
| 239 | UGC242                | J114222.5−062853 | 1518 ± 8         | 9.11  | 11.52      |             |            |             |         |
| 240 | ESO572−016            | J114209.1−181008 | 3385 ± 7         | 10.42 | 112        | 10.51       | 28.5       | 0.81        |         |
| 241 | 2MASX...              | J114638.5−204435 | 3330 ± 7         | 12.53 | 256        | 9.82        | 204.8      | 1.81        |         |
| 242 | NGC3892               | J114801.0−105743 | 1519 ± 5         | 8.34  | 384        | 10.64       | 11.0       | 0.30        |         |
| 243 | UGC245                | J114526.2−100610 | 1487 ± 5         | 6.11  | 11.09      |             |            |             |         |
| 244 | 2MASX...              | J115009.4−040232 | 1480 ± 7         | 12.15 | 155        | 9.16        | 663.4      | 0.15        |         |
| 245 | NGC3936               | J115220.6−265421 | 1756 ± 6         | 9.04  | 281        | 10.50       | 0.4        | 0.12        |         |

Table I: Table. (Contd.)
Table I: Table. (Contd.)

| No. | Name                      | J2000.0         | $V_{LG}$ $\pm$ T | K | $R_\perp$ | log $L_\odot$ | $L_\odot$ | $M_\odot$ | $M_\odot$ | log(II) |
|-----|---------------------------|-----------------|-------------------|---|---------|---------------|-----------|-----------|-----------|---------|
| 247 | NGC3952                   | J115340.6−035948| 1382 5 9 11.00 103 9.74 2.5 | 0.35 |
| 248 | IC2969                    | J115231.3−035220| 1372 6 4 11.14 |           |
| 249 | KDG083                    | J115614.5+311816| 617 5 -3 11.31 125 8.72 165.0 | 0.43 |
| 249 | KUG1157...                | J120016.2+311330| 593 28 4 12.87 |           |
| 250 | IC2986                    | J115949.6+305040| 3107 21 -2 11.17 195 10.14 27.8 | 0.21 |
| 251 | IC0755                    | J120110.4+140616| 1396 8 3 11.32 33 9.47 11.4 | 8.5 | 0.25 |
| 252 | KUG1159...                | J120225.1+292812| 3336 32 7 12.96 113 9.48 40.7 | 0.73 |
| 253 | KISSB083                  | J120303.7+305039| 3066 40 5 13.49 |           |
| 254 | NGC4112                   | J120110.4+140616| 1396 8 3 11.32 33 9.47 11.4 | 8.5 | 0.25 |
| 255 | ESO321−007                | J120722.1−40129 | 2400 45 3 9.17 23 10.69 2.9 | 0.02 |
| 256 | NGC4119                   | J120809.6+102244| 1525 26 -1 8.48 343 10.55 9.3 | 8.1 | 0.30 |
| 257 | NGC4127                   | J120826.4+764815| 2004 5 5 10.01 333 10.21 33.0 | 20.8 | 0.36 |
| 258 | NGC4141                   | J120947.3+585057| 2079 57 6 11.36 59 9.70 5.4 | 1.10 |
| 259 | ESO321−010                | J121142.1−383255| 2861 6 4 10.34 410 10.39 7.7 | 0.12 |
| 260 | NGC4162                   | J121152.5+240725| 2512 5 4 9.35 69 10.64 5.4 | 0.07 |
| 261 | KUG1209...                | J121134.9+240144| 2458 75 10 14.63 |           |
| 262 | NGC4165                   | J121121.8+131448| 1764 17 2 10.48 120 9.91 28.5 | 26.1 | 0.29 |
| 263 | UGC07249                  | J121436.9+124843| 509 5 8 12.73 13 7.96 11.6 | 0.27 |
| 264 | NGC4203                   | J121505.1+331150| 1078 5 -3 7.40 483 10.71 24.5 | 23.4 | 0.13 |
| 265 | ESO321−016                | J121526.7−380839| 2901 8 6 10.89 72 10.20 1.3 | 0.7 | 0.12 |
Table I: Table. (Contd.)

| No. | Name          | J2000.0       | \( V_{LG} \) [\( \pm \) \] km s\(^{-1} \) | T [mag] | \( R_{\perp} \) [kpc] | \( \log L \) | \( \frac{M_{L_K}}{\odot} \) | \( \frac{M_L}{\odot} \) | \( \log(II) \) |
|-----|---------------|---------------|-----------------------------------|--------|-----------------|-------------|----------------|----------------|-------------|
| 266 | NGC4217       | J121550.9+470530 | 1085 5 3 7.58 199 10.80 18.0 6.4 0.20 |
| 266 | NGC4220       | J121611.7+475260 | 1015 35 0 8.13 |
| 267 | UGC07298      | J121630.1+521339 | 254 5 10 12.55 12 7.44 44.8 0.70 |
| 268 | NGC4238       | J121655.8+632436 | 2908 11 7 11.03 52 10.11 2.4 0.1 0.64 |
| 269 | ESO380−008    | J121658.2−372816 | 1835 5 8 11.40 79 9.59 1.4 1.16 |
| 269 | ESO380−009    | J121731.9−371946 | 1828 9 10 14.06 |
| 270 | NGC4290       | J122047.5+580533 | 3143 9 3 9.29 610 10.88 0.6 0.37 |
| 270 | MCG...        | J122634.9+57951 | 3151 67 6 13.22 |
| 271 | KUG1218...    | J122054.9+382549 | 623 46 9 12.97 68 8.02 1287.8 395.8 0.29 |
| 271 | KDG105        | J122143.0+375914 | 582 5 10 15.07 |
| 272 | VCC0513       | J122157.8+022042 | 1699 5 2 12.07 191 9.43 0.3 0.06 |
| 272 | VCC0597       | J122256.6+044449 | 1697 16 3 12.56 |
| 273 | NGC4369       | J122436.2+392259 | 1053 29 1 8.91 154 10.09 29.7 28.0 0.03 |
| 273 | PGC166134     | J122207.0+394442 | 1098 5 10 14.66 |
| 274 | SBS1222+614   | J122505.4+610911 | 832 5 9 13.03 18 8.48 0.1 0.86 |
| 274 | MCG...        | J122453.8+610349 | 833 5 10 13.20 |
| 275 | NGC4384       | J122512.0+543022 | 2616 11 1 10.37 155 10.27 13.9 12.9 0.66 |
| 275 | SDSS...       | J122442.6+544444 | 2578 5 10 14.99 |
| 276 | CGCG...       | J122536.4+502013 | 2563 16 4 12.12 14 9.61 5.3 2.8 2.11 |
| 276 | 2MASX...      | J122528.4+501944 | 2599 12 6 14.45 |
| 277 | UGC07531      | J122612.0−011813 | 1836 42 10 12.74 29 9.11 133.5 0.71 |
| 277 | UM501         | J122622.7−011512 | 1765 60 9 14.04 |
| 278 | NGC4433       | J122738.6−081642 | 2794 10 2 9.50 79 10.95 0.0 1.42 |
| 278 | NGC4428       | J122728.3−081004 | 2801 11 5 9.64 |
| 279 | ESO380−033    | J122744.3−342520 | 2659 9 4 11.91 46 9.84 36.5 0.37 |
| 279 | 2MASX...      | J122724.9−342335 | 2590 74 9 12.67 |
| 280 | UGC07584      | J122802.8+223516 | 543 5 9 13.75 39 7.72 0.0 0.40 |
| 280 | LSBc...       | J122805.0+221727 | 543 5 10 14.56 |
| 281 | NGC4449       | J122811.9+440540 | 252 7 9 7.24 36 9.49 2.0 0.6 0.37 |
| 281 | UGC07577      | J122740.9+432944 | 240 5 10 10.44 |
| 282 | NGC4454       | J122850.8−015621 | 2206 44 0 9.04 65 10.70 3.5 1.6 0.23 |
| 282 | CGCG...       | J122850.7−020339 | 2254 13 4 11.71 |
| 283 | NGC4513       | J123201.5+661957 | 2451 26 1 10.21 275 10.30 32.9 0.87 |
| 283 | SDSS...       | J123602.3+660618 | 2497 58 6 13.73 |
| 284 | ESO322−031    | J123648.7−420827 | 3236 59 −1 9.75 659 10.98 28.1 0.11 |
Table I: Table. (Contd.)

| No. | Name                  | J2000.0          | $V_{LG}$ | T | $K$ | $R_\perp$ | $\log L$ | $M_{L_K}$ | $M_{L_K}$ | $\log(II)$ |
|-----|-----------------------|------------------|----------|---|-----|----------|---------|-----------|-----------|------------|
| 285 | NGC4584               | J123817.9+130635 | 1641     | 1 | 10.45 | 267      | 9.92    | 0.6       | 0.11      |            |
|     | IC3586                | J123654.8+123112 | 1645     | 5 | -1   | 12.11    |         |           |           |            |
| 286 | UGC07798              | J123803.2−021551 | 2418     | 17| 6    | 11.59    | 211     | 9.75      | 35.3      | 27.6       |
|     | SDSS...               | J123905.8−020044 | 2446     | 5 | 8    | 14.29    |         |           |           | 0.74       |
| 287 | NGC4628               | J124225.3−065816 | 2651     | 7  | 3    | 9.45     | 48      | 10.76     | 4.5       | 0.8        |
|     | NGC4626               | J124225.1−070245 | 2718     | 34 | 4    | 10.94    |         |           |           | 0.00       |
| 288 | NGC4630               | J124231.2+035737 | 556      | 36 | 10   | 9.88     | 96      | 9.15      | 68.3      | 0.30       |
|     | VCC1855               | J124050.3+043133 | 586      | 40 | 1    | 14.48    |         |           |           |            |
| 289 | UGC07883              | J124257.3−011346 | 3061     | 18 | 6    | 10.57    | 39      | 10.31     | 43.6      | 42.0       |
|     | SDSS...               | J124309.6−011234 | 2923     | 13 | 9    | 15.69    |         |           |           | 1.02       |
| 290 | NGC4653               | J124350.9−003340 | 2476     | 6  | 6    | 9.96     | 96      | 10.62     | 0.8       | 0.5        |
|     | NGC4642               | J124317.8−003839 | 2494     | 5  | 4    | 10.36    |         |           |           | 0.74       |
| 291 | SDSS...               | J124423.2+620360 | 2660     | 72 | 10   | 15.20    | 78      | 8.62      | 102.0     | 0.94       |
|     | SDSS...               | J124412.1−621019 | 2682     | 8  | 10   | 15.40    |         |           |           |            |
| 292 | ESO268−044            | J124842.2−450029 | 3233     | 30 | 3    | 10.59    | 253     | 10.48     | 26.3      | 0.42       |
|     | 2MASX...              | J124805.2−451909 | 3181     | 74 | -1   | 11.84    |         |           |           |            |
| 293 | ESO575−012            | J125147.4−221658 | 3367     | 74 | 4    | 12.47    | 248     | 9.78      | 520.5     | 0.37       |
|     | ESO575−003            | J125031.7−221205 | 3471     | 74 | 4    | 13.75    |         |           |           |            |
| 294 | ESO575−017            | J125240.2−221134 | 3223     | 29 | 7    | 11.60    | 186     | 10.09     | 3.5       | 0.12       |
|     | ESO575−019            | J125327.9−22053  | 3237     | 5  | 8    | 12.75    |         |           |           |            |
| 295 | ESO507−036            | J125259.2−240326 | 3138     | 10 | 4    | 11.22    | 334     | 10.11     | 114.2     | 0.25       |
|     | AM1251−240...         | J125406.5−24538  | 3077     | 74 | 9    | 14.03    |         |           |           |            |
| 296 | NGC4793               | J125440.7+285618 | 2474     | 20 | 5    | 8.48     | 12      | 10.96     | 3.0       | 0.2        |
|     | KISSR0148             | J125445.2+285529 | 2336     | 67 | 10   | 15.60    |         |           |           | 1.00       |
| 297 | NGC4767B              | J125445.0−395108 | 3241     | 18 | 6    | 9.79     | 106     | 10.75     | 15.7      | 0.21       |
|     | ESO323−040            | J125428.5−394341 | 3325     | 74 | 4    | 12.07    |         |           |           |            |
| 298 | 2MASX...              | J125557.3−283846 | 2929     | 35 | 0    | 11.19    | 146     | 10.32     | 3.4       | 0.09       |
|     | ESO443−010            | J125532.6−282733 | 2950     | 7  | 2    | 11.35    |         |           |           |            |
| 299 | ARK396                | J125726.5−032927 | 2947     | 28 | -2   | 10.34    | 133     | 10.41     | 105.8     | 0.42       |
|     | SDSS...               | J125722.9−034028 | 3079     | 90 | 10   | 14.96    |         |           |           |            |
| 300 | NGC4830               | J125727.9−194129 | 3142     | 12 | -3   | 8.82     | 17      | 11.12     | 19.0      | 15.8       |
|     | 2MASX...              | J125732.7−194201 | 3498     | 74 | 1    | 12.46    |         |           |           |            |
| 301 | UGC08127              | J130103.7−015712 | 1297     | 33 | 10   | 12.68    | 8       | 8.89      | 0.2       | 0.07       |
|     | UGC08127...           | J130100.7−015834 | 1302     | 5  | 10   | 13.64    |         |           |           |            |
| 302 | ESO323−068            | J130157.1−410414 | 3103     | 59 | 3    | 10.32    | 497     | 10.55     | 63.6      | 0.09       |
|     | AM1300−412            | J130300.4−41215  | 3165     | 74 | 3    | 11.74    |         |           |           |            |
| 303 | UGCA319               | J130214.4−171415 | 548      | 8  | 10   | 11.59    | 40      | 8.53      | 0.8       | 0.84       |
| No. | Name                  | J2000.0     | \(V_{LG}\) ± \(V_{LG}\) | T       | \(K\) | \(R_\perp\) | \(L_\odot\) | \(M_\odot\) | \(M_\odot\) | \(log(II)\) |
|-----|-----------------------|-------------|---------------------------|---------|-------|-------------|-------------|-------------|-------------|--------------|
| 304 | LCRS...               | J130235.6–113807 | 3293 ± 9 | 6 | 10.14 | 557 | 9.55 | 0.0 | 0.0 | 0.0 | 1.65 |
| PGC045016 | | J130231.4–112613 | 3287.88 ± 9 | 6 | 13.84 | 75 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 305 | UGC09153              | J130305.9+035931 | 2744.5 ± 6 | 6 | 10.87 | 47 | 10.12 | 0.2 | 0.0 | 0.0 | 1.65 |
| SDSS... | | J130249.2+035836 | 2753.55 ± 10 | 15 | 57.3 | 50 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 306 | NGC4961               | J130547.6+274403 | 2528.17 ± 6 | 6 | 10.84 | 15 | 10.07 | 0.2 | 0.0 | 0.0 | 1.00 |
| LSBC... | | J130549.7+274239 | 2517.5 ± 10 | 14.60 | 0 | 0 | 0 | 0 | 0 | 0 |
| 307 | SBS1307+542           | J130908.8+535637 | 2608 ± 33 | 3 | 12.13 | 94 | 9.83 | 11.6 | 0.0 | 0.0 | 1.66 |
| UGC08231 | | J130837.6+540428 | 2581 ± 6 | 5 | 12.28 | 94 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| 308 | NGC4989               | J130916.0–052347 | 2888 ± 38 | 2 | 9.23 | 88 | 10.97 | 22.0 | 0.0 | 0.0 | 0.0 |
| NGC4990 | | J130917.3–051622 | 3029.7 ± 2 | 10.35 | 0 | 0 | 0 | 0 | 0 | 0 |
| 309 | NGC4995               | J130940.7–075000 | 1605 ± 7 | 3 | 8.21 | 40 | 10.94 | 40.6 | 0.0 | 0.0 | 0.0 |
| NGC4981 | | J130848.7–064639 | 1519 ± 6 | 4 | 8.47 | 0 | 0 | 0 | 0 | 0 |
| 310 | NGC4988               | J130954.4–430621 | 1842 ± 42 | −1 | 11.85 | 48 | 9.42 | 20.8 | 0.0 | 0.0 | 0.0 |
| ESO269–056 | | J131001.6–431243 | 1873 ± 15 | 10 | 14.49 | 0 | 0 | 0 | 0 | 0 |
| 311 | UGC08246              | J131004.5+341051 | 833 ± 5 | 7 | 13.14 | 21 | 8.26 | 214.2 | 0.0 | 0.0 | 0.0 |
| MAPS–N... | | J131029.2+341413 | 873 ± 7 | 5 | 15.03 | 0 | 0 | 0 | 0 | 0 |
| 312 | UGC08255              | J131056.5+112838 | 3285 ± 6 | 6 | 11.38 | 184 | 10.16 | 27.7 | 26.0 | 0.0 | 0.0 |
| UGC08253 | | J131043.9–112228 | 3242 ± 5 | 6 | 12.90 | 0 | 0 | 0 | 0 | 0 |
| 313 | ESO382–016            | J131312.4–364322 | 3032 ± 33 | −2 | 9.36 | 16 | 10.92 | 34.2 | 0.0 | 0.0 | 0.0 |
| 2MASX... | | J131208.8–363934 | 3152 ± 7 | 1 | 10.92 | 0 | 0 | 0 | 0 | 0 |
| 314 | UGC08316              | J131406.5+480923 | 2619 ± 34 | 4 | 12.49 | 151 | 9.45 | 94.2 | 69.9 | 1.13 |
| SDSS... | | J131239.0+480919 | 2581 ± 5 | 9 | 15.43 | 0 | 0 | 0 | 0 | 0 |
| 315 | UGC08331              | J131530.3+472956 | 344 ± 6 | 10 | 12.20 | 4 | 7.76 | 20.0 | 0.0 | 0.0 | 0.0 |
| DDO169 NW | | J131518.4+473200 | 328 ± 7 | 5 | 16.61 | 0 | 0 | 0 | 0 | 0 |
| 316 | IC4216                | J131701.9–104612 | 2664 ± 8 | 6 | 10.73 | 407 | 10.36 | 13.3 | 0.0 | 0.0 | 0.37 |
| NGC5066 | | J131828.5–101402 | 2639 ± 4 | 3 | 11.20 | 0 | 0 | 0 | 0 | 0 |
| 317 | ESO576–024            | J131757.5–215147 | 2824 ± 7 | 8 | 13.00 | 169 | 9.55 | 319.9 | 0.5 | 0.0 | 0.0 |
| ESO576–023 | | J131739.4–213711 | 2749 ± 9 | 8 | 13.13 | 0 | 0 | 0 | 0 | 0 |
| 318 | NGC5068               | J131854.8–210221 | 471 ± 5 | 6 | 7.51 | 271 | 9.92 | 7.5 | 0.0 | 0.0 | 0.65 |
| 2MASX... | | J132921.0–210145 | 457 ± 2 | 12.56 | 0 | 0 | 0 | 0 | 0 |
| 319 | ESO576–040            | J132043.7–220304 | 1885 ± 12 | 7 | 11.37 | 10 | 9.63 | 0.1 | 0.0 | 0.0 | 0.09 |
| [CCF97]G8 | | J132049.6–220318 | 1879 ± 6 | 5 | 13.66 | 0 | 0 | 0 | 0 | 0 |
| 320 | NGC5144               | J132254.1+703053 | 3325 ± 14 | 5 | 10.07 | 88 | 10.61 | 9.7 | 0.0 | 0.0 | 0.50 |
| UGC08434 | | J132413.9+703153 | 3264 ± 7 | 5 | 13.60 | 0 | 0 | 0 | 0 | 0 |
| 321 | NGC5114               | J132401.7–322038 | 3357 ± 26 | −3 | 9.27 | 180 | 11.07 | 43.5 | 34.8 | 0.20 |
| ESO444–019 | | J132306.3–321441 | 3512 ± 37 | −2 | 10.49 | 0 | 0 | 0 | 0 | 0 |
| 322 | NGC5122               | J132414.9–103915 | 2681 ± 22 | −1 | 10.02 | 122 | 10.43 | 26.1 | 24.2 | 0.37 | 0.0 |

Table I: Table (Contd.)
| No. | Name          | J2000.0          | $V_{LG}$ ± T km s$^{-1}$ | $K$ mag | $R_\perp$ kpc | $\log L/L_\odot$ | $M_*/L_K$ $\odot$ | $M_*/R_K$ $\odot$ | log($II$) |
|-----|---------------|------------------|--------------------------|---------|---------------|------------------|------------------|------------------|----------|
| 323 | IC4237        | J132432.8 − 210813 | 2451 ± 7               | 9.29    | 304 ± 10.71   | 6.8              | 0.67             |                  |
| 324 | MCG...        | J132516.0 − 203859 | 2482 ± 29              | 4.115   |               |                  |                  |                  |
| 325 | 2MASX...      | J133549.8 − 341433 | 3086 ± 30              | 4.128   | 201 ± 9.68    | 234.0            | 0.38             |                  |
| 326 | UGC08602      | J133645.5 + 320528 | 3062 ± 5               | 10.60   | 8.61          | 47.7             | 41.1             | 0.58             |
| 327 | NGC5247       | J133803.0 − 175303 | 1179 ± 5               | 7.49    | 586 ± 10.76   | 33.9             | 32.7             | 0.01             |
| 328 | HII PASS...   | J133928.8 − 461811 | 2306 ± 9               | 8.138   |               |                  |                  |
| 329 | NGC5303       | J134745.0 + 381816 | 1466 ± 18              | 10.22   | 16 ± 9.87     | 0.0              | 0.39             |                  |
| 330 | ESO0577−027   | J134246.9 − 193454 | 1232 ± 5               | 10.156  |               |                  |                  |
| 331 | NGC5342       | J135125.9 + 595148 | 2368 ± 27              | 10.34   | 192 ± 10.29   | 18.6             | 0.03             |                  |
| 332 | SDSS...       | J134925.5 + 593831 | 2407 ± 67              | 9.1521  |               |                  |                  |
| 333 | IC4341        | J135334.2 + 373120 | 2425 ± 36              | 11.70   | 88 ± 9.92     | 55.5             | 23.4             | 0.34             |
| 334 | UGC08795      | J135248.5 + 372927 | 2359 ± 11              | 6.1196  |               |                  |                  |
| 335 | NGC5376       | J135516.1 + 593024 | 2230 ± 31              | 9.09    | 458 ± 10.69   | 10.4             | 0.14             |                  |
| 336 | UGC08741      | J134856.3 + 595099 | 2200 ± 45              | 11.46   |               |                  |                  |
| 337 | ESO0510−013   | J135504.4 − 264650 | 3262 ± 8               | 1.879   | 393 ± 11.11   | 12.0             | 1.61             |                  |
| 338 | 6DF...        | J135543.9 − 261812 | 3320 ± 74              | 5.1306  |               |                  |                  |
| 339 | VV100         | J135545.5 − 060010 | 1942 ± 5               | 8.1236  | 26 ± 9.31     | 10.9             | 1.47             |                  |
| 340 | VV099         | J135534.2 − 058822 | 1915 ± 52              | 9.1388  |               |                  |                  |
| 341 | NGC5377       | J135616.7 + 471408 | 1899 ± 9               | 8.35    | 600 ± 10.80   | 0.5              | 0.19             |                  |
| 342 | SDSS...       | J135005.0 + 462701 | 1905 ± 5               | 9.1485  |               |                  |                  |
| 343 | KUG1356... A  | J135823.0 + 225317 | 2813 ± 35              | 3.1230  | 27 ± 9.76    | 1.2              | 0.97             |                  |
| 344 | KUG1356... B  | J135824.7 + 225539 | 2798 ± 35              | 4.1289  |               |                  |                  |
| 345 | LCRS...       | J140125.2 − 035816 | 3107 ± 53              | 5.1319  | 59 ± 9.48     | 70.4             | 1.80             |                  |
| 346 | LCRS...       | J140115.2 − 035414 | 3162 ± 74              | 5.1394  |               |                  |                  |
| 347 | UGC08982      | J140300.0 + 614504 | 1868 ± 31              | 9.1284  | 153 ± 9.09    | 30.5             | 0.01             |                  |
| 348 | SDSS...       | J140524.6 + 613401 | 1883 ± 5               | 9.1441  |               |                  |                  |
| 349 | IC0971        | J140352.8 − 100826 | 3190 ± 5               | 10.45   | 58 ± 10.46    | 2.8              | 2.26             |                  |
| No. | Name       | J2000.0          | $V_{LG}$ ± | T  | $K$ | $R_\perp$ | log $L/L_\odot$ | $M_{L_K}/L_\odot$ | $M_{L_K}/L_\odot$ | log($II$) |
|-----|------------|------------------|------------|----|-----|----------|-----------------|---------------------|---------------------|-----------|
| 342 | ESO510−058 | J140437.4−244959 | 3156 75    | 4  | 12.67 | 10.43 18 | 10.16 0.0     | 0.15                |                     |           |
| 343 | UGC08995   | J140444.6−244938 | 2160 8     | 6  | 12.14 | 8.47 42.0 | 38.9 0.47     |                     |                     |           |
| 344 | IC4358     | J140634.9−052711 | 2732 5     | 6  | 10.39 | 55 10.57 | 8.7 4.6 0.49   |                     |                     |           |
| 345 | HIPASS...  | J140940.8−144622 | 2190 9     | 7  | 13.21 | 9.16 0.6  | 1.69           |                     |                     |           |
| 346 | CGCG...    | J140954.9+564921 | 1930 28    | 1  | 11.58 | 129 9.56 30.9 | 0.01               |                     |                     |           |
| 347 | NGC5496    | J141137.9−010933 | 1455 5     | 7  | 10.30 | 252 10.08 | 2.2 0.31       |                     |                     |           |
| 348 | ESO510−059 | J140447.4+084803 | 1182 5     | 8  | 13.18 | 8.47 42.0 | 38.9 0.47     |                     |                     |           |
| 349 | LSBC...    | J140441.6+084716 | 1145 5     | 10 | 16.34 | 8.47 42.0 | 38.9 0.47     |                     |                     |           |
| 350 | NGC5472    | J140655.0−052738 | 2803 32    | 2  | 10.64 |                     |                |                     |                     |           |
| 351 | NGC5493    | J141129.4−052738 | 2183 74    | 5  | 13.93 |                     |                |                     |                     |           |
| 352 | NGC5526    | J141353.7+574617 | 2180 16    | 6  | 10.32 | 59 10.16 | 42.7 42.1 0.46 |                     |                     |           |
| 353 | ESO510−058 | J140940.8−144622 | 2190 9     | 7  | 13.21 | 9.16 0.6  | 1.69           |                     |                     |           |
| 354 | ESO510−059 | J140444.6−244938 | 2160 8     | 6  | 12.14 | 8.47 42.0 | 38.9 0.47     |                     |                     |           |
| 355 | IC4358     | J140634.9−052711 | 2732 5     | 6  | 10.39 | 55 10.57 | 8.7 4.6 0.49   |                     |                     |           |
| 356 | ESO510−058 | J140437.4−244959 | 3156 75    | 4  | 12.67 | 10.43 18 | 10.16 0.0     | 0.15                |                     |           |
| 357 | HIPASS...  | J140940.8−144622 | 2190 9     | 7  | 13.21 | 9.16 0.6  | 1.69           |                     |                     |           |
| 358 | CGCG...    | J140954.9+564921 | 1930 28    | 1  | 11.58 | 129 9.56 30.9 | 0.01               |                     |                     |           |
| 359 | NGC5496    | J141137.9−010933 | 1455 5     | 7  | 10.30 | 252 10.08 | 2.2 0.31       |                     |                     |           |
| 360 | ESO510−059 | J140444.6−244938 | 2160 8     | 6  | 12.14 | 8.47 42.0 | 38.9 0.47     |                     |                     |           |
| No. | Name       | J2000.0       | $V_{LG} \pm$ | T      | $R_\perp$ | log $L$ | $M_\star/L_K$ | $M/L_K$ | log($II$) |
|-----|------------|---------------|---------------|--------|-----------|---------|---------------|---------|-----------|
| 361 | UGC09299   | J142934.6−00106 | 1475 13     | 6    | 11.25     | 221     | 9.56          | 79.8   | 0.45      |
| 362 | ESO385−031 | J142931.7−343728 | 2921 74     | 6    | 10.61     | 288     | 10.46         | 40.8   | 0.27      |
| 363 | NGC5656    | J143025.5+351915 | 3525 21     | 2    | 9.34      | 105     | 10.88         | 1.4    | 1.2       | 0.55    |
| 364 | ESO511−050 | J143132.6−252314 | 2397 8      | 5    | 10.68     | 249     | 10.10         | 3.3    | 0.90      |
| 365 | IC4444     | J143138.6−432506 | 1750 6      | 4    | 8.54      | 85      | 10.65         | 7.2    | 0.66      |
| 366 | NGC5665    | J143225.8+080443 | 2197 29     | 5    | 9.47      | 450     | 10.49         | 37.8   | 0.31      |
| 367 | CGCG...    | J143245.2+025454 | 1472 5      | 4    | 13.20     | 130     | 8.93          | 61.9   | 0.23      |
| 368 | SDSS...    | J143234.5+095539 | 1349 6      | 6    | 10.34     | 33      | 9.75          | 0.8    | 0.89      |
| 369 | KUG1429... | J143401.3−782315 | 2458 41     | 2    | 8.92      | 453     | 10.82         | 18.1   | 15.5      | 1.11    |
| 370 | UGC09389   | J143533.3+125430 | 1816 5      | 3    | 12.25     | 113     | 9.33          | 32.9   | 26.5      | 1.18    |
| 371 | UGC09394   | J143539.9+130102 | 1793 5      | 6    | 13.40     |         |              |        |           |         |
| 372 | NGC5730    | J143952.2+424432 | 2648 10     | 4    | 10.99     | 41      | 10.24         | 0.1    | 0.36      |
| 373 | ESO447−030 | J143946.3−324009 | 2798 23     | −2   | 9.17      | 258     | 11.03         | 15.2   | 9.4       | 0.71    |
| 374 | NGC5727    | J144026.2+335921 | 1575 5      | 8    | 12.38     | 50      | 9.11          | 128.9  | 1.73      |
| 375 | FGC1793    | J144112.1−173846 | 3298 5      | 7    | 12.81     | 111     | 9.67          | 5.8    | 3.0       | 0.07    |
| 376 | UGC09504...| J144527.6+312537 | 1649 35     | 8    | 12.64     | 8       | 9.00          | 26.0   | 19.7      | 1.86    |
| 377 | UGC09506   | J144532.6+312454 | 1597 5      | 10   | 14.89     |         |              |        |           |         |
| 378 | NGC5762    | J144842.6+122726 | 1796 5      | 3    | 10.88     | 187     | 9.78          | 37.8   | 21.1      | 1.29    |
| 379 | SDSS...    | J144948.8+362347 | 1979 5      | 10   | 14.20     | 10      | 8.70          | 0.0    | 1.84      |
| No. | Name             | J2000.0           | $V_{LG}$ | T | $K$ | $R_\perp$ | log $L$ | $M_{L_K}/L_\odot$ | $M_{T_K}/L_\odot$ | log($II$) |
|-----|------------------|-------------------|---------|---|-----|---------|---------|-------------------|-------------------|----------|
| 380 | UGC09562         | J145114.4+353232  | 1355    | 21| 5   | 12.04   | 21      | 9.19              | 141.7             | 11.5     | 2.33     |
| 380 | UGC09560         | J145056.5+353418  | 1305    | 22| 9   | 12.79   |         |                   |                   |          |          |
| 381 | ESO512−023       | J145113.8−263753  | 2435    | 6 | 2   | 9.69    | 9       | 10.57             | 6.9               | 6.7      | 0.79     |
| 382 | MCG...           | J145110.4−263818  | 2592    | 15| 5   | 11.79   |         |                   |                   |          |          |
| 383 | SDSS...          | J145601.2+022749  | 2082    | 24| −2  | 11.56   | 191     | 9.62              | 100.0             | 2.1      | 0.58     |
| 384 | NGC5798          | J145738.0+295807  | 1870    | 7 | 9   | 10.94   | 156     | 10.00             | 4.8               | 21.1     |          |
| 385 | NGC5789          | J145635.5+301403  | 1886    | 5 | 8   | 11.23   |         |                   |                   |          |          |
| 386 | UGC09665         | J150132.5+481911  | 2707    | 7 | 4   | 10.26   | 82      | 10.38             | 4.0               | 3.3      | 1.11     |
| 387 | UGC09657         | J150048.7+482139  | 2675    | 7 | 8   | 12.87   |         |                   |                   |          |          |
| 388 | IC4522           | J151128.9−755136  | 2617    | 9 | 3   | 9.58    | 408     | 10.62             | 32.3              | 28.6     | 0.73     |
| 389 | NGC5878          | J151345.7−141611  | 1908    | 5 | 3   | 8.12    | 524     | 10.90             | 17.9              | 15.5     | 0.52     |
| 390 | MCG...           | J151354.2−130622  | 1860    | 9 | 3   | 11.85   |         |                   |                   |          |          |
| 391 | NGC5899          | J151504.1+611212  | 2692    | 26| 3   | 10.89   | 331     | 10.12             | 28.2              |          | 0.40     |
| 392 | NGC5900          | J151505.1+421235  | 2649    | 8 | 3   | 9.42    |         |                   |                   |          |          |
| 393 | MCG...           | J152132.6−072238  | 1855    | 36| 3   | 10.74   | 32      | 10.04             | 3.8               | 1.19     |          |
| 394 | MCG...           | J152133.3−072652  | 1888    | 75| −2  | 11.26   |         |                   |                   |          |          |
| 395 | 6dF...           | J152224.4−125219  | 3267    | 7 | 7   | 13.95   |         |                   |                   |          |          |
| 396 | MRK0482          | J152804.2+553245  | 3515    | 38| 2   | 11.19   | 95      | 10.27             | 8.0               | 0.32     |          |
| 397 | MRK0481          | J152750.5+552613  | 3479    | 75| −1  | 13.00   |         |                   |                   |          |          |
| 398 | SDSS...          | J153345.7−013742  | 2773    | 12| 8   | 10.88   | 76      | 10.14             | 48.7              | 10.4     | 0.30     |
| 399 | NGC5957          | J153523.2+120536  | 3156    | 59| 1   | 9.50    | 617     | 10.80             | 140.1             | 0.64     |          |
| 400 | NGC5956          | J153458.5+114501  | 1944    | 5 | 2   | 9.86    |         |                   |                   |          |          |
| 401 | NGC5970          | J153830.0+121112  | 2003    | 5 | 5   | 8.80    | 67      | 10.73             | 5.3               | 1.7      | 0.09     |
| 402 | IC1131           | J153851.7+120450  | 2063    | 26| −5  | 11.05   |         |                   |                   |          |          |
| 403 | ESO022−010       | J153334.9−780726  | 2453    | 59| −2  | 10.13   | 444     | 10.53             | 2.2               | 1.17     |          |
| No. | Name          | J2000.0          | $V_{LG}$ ± 1 km s$^{-1}$ | T  | $K$ mag | $R_\perp$ kpc | log $L_\odot$ | $M_{L_K}^\odot$ | $M_{T_K}^\odot$ | log(II) |
|-----|--------------|-----------------|--------------------------|----|---------|----------------|---------------|----------------|----------------|---------|
| 399 | UGC09977     | J154159.5+00246 | 1918 5 5 10.56 117 10.16 | 19.6 | 18.7 | 0.96 |
| 399 | UGC09979     | J154219.5+00288 | 1964 5 10 10.98 | |
| 400 | UGC10010     | J154445.7+460441 | 2805 23 7 12.54 212 9.67 | 41.5 | 1.01 |
| 400 | MRK0490      | J154630.7+455954 | 2832 5 9 13.09 | |
| 401 | UGC10043     | J154841.2+215210 | 2252 5 4 10.39 79 10.16 | 54.5 | 1.14 |
| 401 | UGC10049...  | J154917.1+214943 | 2343 63 8 14.39 | |
| 402 | NGC6015      | J155125.2+621836 | 1041 6 6 8.47 257 10.26 | 50.1 | 48.1 | 0.28 |
| 402 | UGC10031     | J154545.7+613321 | 1096 6 9 14.59 | |
| 403 | NGC6017      | J155715.5+055954 | 1830 75 −2 9.79 120 10.20 | 6.6 | 0.15 |
| 403 | SDSS...      | J155614.4+060553 | 1857 45 9 14.70 | |
| 404 | NGC6070      | J160958.7+004234 | 2033 7 6 8.69 556 10.76 | 2.9 | 1.2 | 0.02 |
| 404 | UGC10290     | J161432.9+004918 | 2017 6 9 11.40 | |
| 405 | UGC10288     | J161424.8−001227 | 2075 5 5 9.34 358 10.51 | 24.5 | 23.2 | 0.02 |
| 406 | VV370        | J161329.0−005301 | 2118 5 9 12.55 | |
| 406 | MCG...       | J164203.2−050158 | 1601 5 4 8.99 383 10.46 | 2.2 | 0.6 | 1.42 |
| 406 | MCG...       | J163808.6−044924 | 1612 5 4 11.07 | |
| 407 | NGC6207      | J164303.7+364957 | 1037 5 3 9.12 293 9.98 | 0.5 | 0.76 |
| 407 | UGC10477     | J163734.8+371710 | 1033 8 7 13.25 | |
| 408 | 2MASX...     | J164808.3−002514 | 2396 74 6 12.52 | 57 9.62 | 1.7 | 2.63 |
| 408 | 2MASX...     | J164759.2−001945 | 2407 9 10 12.62 | |
| 409 | UGC10625     | J165723.1+384019 | 2252 6 8 13.82 | 15 8.97 | 0.2 | 1.02 |
| 409 | SHOC553      | J165730.0+384123 | 2255 5 9 14.37 | |
| 410 | UGC10743     | J171130.7+075941 | 2683 20 3 10.32 | 285 10.33 | 8.9 | 6.7 | 2.08 |
| 410 | HIPASS...    | J170956.0+074713 | 2707 5 8 14.06 | |
| 411 | UGC10770...  | J171310.2+591956 | 1391 32 8 11.60 | 4 9.54 | 0.6 | 2.52 |
| 411 | UGC10770...  | J171307.1+591924 | 1414 27 8 11.60 | |
| 412 | NGC6368      | J172711.5+113237 | 2905 5 3 9.13 | 221 10.87 | 0.7 | 0.4 | 0.06 |
| 412 | UGC10852     | J172617.3+111901 | 2919 5 6 13.53 | |
| 413 | UGC10887     | J172607.0+774213 | 2088 5 6 12.32 | 185 9.57 | 18.3 | 1.84 |
| 413 | UGC10907     | J172959.2+772347 | 2071 34 4 12.46 | |
| 414 | UGC10864     | J172819.4+141008 | 3030 31 −2 10.12 | 158 10.55 | 66.5 | 60.1 | 1.20 |
| 414 | CGCG...      | J172901.7+141751 | 3143 16 3 12.88 | |
| 415 | NGC6384      | J173224.3+070337 | 1791 5 4 7.48 | 481 11.11 | 2.7 | 2.3 | 1.65 |
| 415 | UGC10862     | J172808.9+072521 | 1816 5 5 11.66 | |
| 416 | NGC6470      | J174414.9+673710 | 1719 21 3 11.12 | 145 9.70 | 0.0 | 2.09 |
| 416 | UGC10991     | J174628.9+672017 | 1718 5 10 12.72 | |
| 417 | ESO139−049   | J180035.0−590811 | 2611 8 6 10.25 | 257 10.44 | 40.6 | 36.6 | 0.42 |
Table I: Table. (Contd.)

| No. | Name           | J2000.0         | $V_{LG}$ | ± | T  | $K$ | $R_\perp$ | $\log L$ | $M_\star$ | $M_\star$ | $\log(II)$ |
|-----|----------------|----------------|----------|---|----|-----|----------|----------|-----------|-----------|-------------|
|     |                |                | km s$^{-1}$ |   |    |     | kpc      | L$_\odot$ | L$_\odot$ | L$_\odot$ |            |
| 418 | NGC6548        | J180559.2+183514 | 2369     | 27 | 1  | 8.55 | 615      | 11.04    | 15.7      | 10.5      | 0.38        |
|     | NGC6555        | J180749.2+173618 | 2418     | 5  | 5  | 9.80 |          |          |           |           |             |
| 419 | 2MASX...       | J181037.5+561640 | 3459     | 36 | 5  | 10.67 | 92       | 10.65    | 4.5       | 1.15      |             |
|     | IC4679         | J181124.5+561516 | 3502     | 16 | 6  | 10.92 |          |          |           |           |             |
| 420 | NGC6574        | J181151.2+145854 | 2471     | 6  | 4  | 8.35 | 535      | 11.13    | 0.1       | 0.14      |             |
|     | NGC6570        | J181107.3+140535 | 2466     | 6  | 9  | 9.82 |          |          |           |           |             |
| 421 | NGC6585        | J181221.8+393759 | 3077     | 8  | 4  | 10.26 | 380      | 10.48    | 2.7       | 1.1       | 0.29        |
|     | UGC11140       | J181109.3+391014 | 3064     | 5  | 6  | 13.37 |          |          |           |           |             |
| 422 | UGC11152       | J181232.2+183556 | 2928     | 5  | 8  | 12.56 | 28       | 9.54     | 8.6       | 0.89      |             |
|     | UGC11152...    | J181222.5+183630 | 2958     | 20 | 10 | 15.15 |          |          |           |           |             |
| 423 | IC4694         | J181526.4+581232 | 2644     | 9  | 5  | 10.29 | 265      | 10.60    | 31.6      | 9.8       | 0.88        |
|     | 2MASX...       | J181214.2+581503 | 2580     | 36 | 1  | 10.31 |          |          |           |           |             |
| 424 | NGC6599        | J181543.0+245445 | 3253     | 26 | 2  | 9.77 |          |          |           |           |             |
|     | NGC6602        | J181634.3+250239 | 3299     | 25 | 2  | 9.77 |          |          |           |           |             |
| 425 | NGC6438        | J182217.5+852407 | 2349     | 75 | 2  | 8.22 | 4        | 11.29    | 0.0       | 0.02      |             |
|     | NGC6438A       | J182235.5+852423 | 2377     | 75 | 10 | 8.55 |          |          |           |           |             |
| 426 | NGC6667        | J183039.8+675913 | 2856     | 6  | 2  | 9.28 | 569      | 10.82    | 16.9      | 2.18      |             |
|     | UGC11222       | J182156.4+680744 | 2897     | 63 | 6  | 12.32 |          |          |           |           |             |
| 427 | IC4721         | J183424.8+582948 | 2116     | 5  | 6  | 8.90 | 71       | 10.77    | 45.5      | 45.0      | 1.30        |
|     | IC4720         | J183332.5+582419 | 1936     | 11 | 6  | 10.00 |          |          |           |           |             |
| 428 | UGC11291       | J183604.5+305023 | 3137     | 7  | 7  | 13.17 | 225      | 9.50     | 24.3      | 0.17      |             |
|     | CGCG...        | J183506.2+303730 | 3154     | 29 | 5  | 13.85 |          |          |           |           |             |
| 429 | NGC6654A       | J183927.1+733442 | 1824     | 7  | 7  | 11.91 | 19       | 9.58     | 1.0       | 0.23      |             |
|     | UGC11331       | J183860.0+733634 | 1811     | 9  | 10 | 12.26 |          |          |           |           |             |
| 430 | IC4807         | J190217.7+565552 | 3397     | 36 | 5  | 10.53 | 281      | 10.47    | 19.1      | 10.3      | 0.29        |
|     | HIPASS...      | J185949.7+570128 | 3356     | 9  | 6  | 12.98 |          |          |           |           |             |
| 431 | NGC6764        | J190816.4+505560 | 2700     | 8  | 4  | 9.33 | 405      | 10.81    | 2.5       | 1.49      |             |
|     | NGC6759        | J190656.8+502039 | 2718     | 45 | 2  | 10.95 |          |          |           |           |             |
| 432 | IC4837         | J191514.6+543947 | 2582     | 18 | 6  | 9.80 | 555      | 10.70    | 6.0       | 0.30      |             |
|     | IC4821         | J190932.0+550102 | 2603     | 10 | 5  | 10.35 |          |          |           |           |             |
| 433 | ESO338--004    | J192758.2+413432 | 2850     | 26 | 4  | 12.60 | 76       | 9.64     | 57.2      | 1.62      |             |
|     | ESO338--004B   | J192731.6+413854 | 2903     | 75 | 5  | 13.32 |          |          |           |           |             |
| 434 | NGC6814        | J194240.6+101925 | 1703     | 5  | 4  | 7.59 | 617      | 11.00    | 23.3      | 21.0      | 0.74        |
|     | HIPASS...      | J194833.7+094802 | 1647     | 9  | 10 | 13.89 |          |          |           |           |             |
| 435 | NGC6810        | J194334.4+583921 | 1929     | 46 | 2  | 8.66 | 86       | 10.68    | 19.6      | 17.9      | 0.19        |
|     | ESO142--032    | J194236.9+584806 | 1833     | 13 | 10 | 12.88 |          |          |           |           |             |
| 436 | NGC6835        | J195433.1+123409 | 1761     | 54 | 1  | 8.80 | 51       | 10.61    | 0.0       | 0.79      |             |
| No. | Name                  | J2000.0          | $V_{LG}$ $\pm$ T | $K$ | $R_\perp$ | $\log L/L_\odot$ | $M/L_\odot$ | $M/L_\odot$ | log($II$) |
|-----|----------------------|------------------|------------------|-----|----------|------------------|-------------|-------------|-----------|
| 437 | NGC6869              | J2000.42.4+661339 | 3024 42 $-$2 8.65 679 11.08 | 43.8 | 40.3 | 0.74 |
| kkh092 |                 | J201001.1+660501 | 2943 11 10 | 14.21 | | |
| 438 | HIPASS...            | J201046.9$-$113835 | 3352 9 | 7 | 12.28 | 56 | 9.88 | 75.8 | 0.60 |
| 2MASX... |            | J201103.7$-$113008 | 3258 74 | 5 | 13.13 | | | | |
| 439 | 2MASX...             | J201411.8$-$114537 | 3385 74 | 7 | 11.73 | 276 10.05 | 3.0 | 0.60 |
| HIPASS... |            | J201252.5$-$113913 | 3395 9 | 5 | 13.29 | | | | |
| 440 | IC4960               | J201523.9$-$703216 | 3324 30 $-$2 10.42 | 474 10.51 | 52.7 | 43.5 | 0.13 |
| IC4962 |            | J201642.5$-$710746 | 3269 5 | 4 | 12.55 | | | | |
| 441 | NGC6887              | J201717.3$-$524748 | 2639 8 | 4 | 8.85 | 117 10.89 | 0.3 | 0.63 |
| NGC6887... |            | J201605.2$-$524539 | 2626 30 | 9 | 14.00 | | | | |
| 442 | IC1313               | J201843.7$-$165645 | 3421 19 | 2 | 9.56 | 60 | 10.83 | 30.9 | 8.6 | 0.31 |
| 2MASX... |            | J201828.6$-$165930 | 3250 74 | 3 | 12.93 | | | | |
| 443 | ESO462$-$025         | J202908.2$-$275452 | 3127 5 | 8 | 13.28 | 215 | 9.42 | 203.8 | 0.87 |
| ESO462$-$022 |            | J202806.5$-$280509 | 3173 68 | 8 | 14.24 | | | | |
| 444 | IC5020               | J203038.5$-$332908 | 3127 8 | 3 | 9.26 | 91 | 10.88 | 0.1 | 0.18 |
| ESO400$-$037 |            | J203113.5$-$332841 | 3119 5 | 6 | 13.72 | | | | |
| 445 | ESO596$-$051         | J203105.0$-$181202 | 2413 74 | 7 | 11.41 | 3 | 9.89 | 0.0 | 2.74 |
| ESO596$-$051 |            | J203106.3$-$181157 | 2414 9 | 8 | 12.87 | | | | |
| 446 | AM2029$-$235...      | J203236.0$-$234258 | 3154 74 | 3 | 13.61 | 35 | 9.43 | 0.3 | 0.65 |
| AM2029$-$235... |            | J203225.5$-$234135 | 3158 74 | 3 | 13.67 | | | | |
| 447 | ESO234$-$049         | J203518.1$-$495156 | 2536 8 | 4 | 10.59 | 372 | 10.17 | 7.3 | 0.31 |
| 6dF... |            | J203210.1$-$493056 | 2520 74 | 9 | 14.23 | | | | |
| 448 | ESO186$-$065         | J203557.2$-$541758 | 3398 26 $-$3 | 9.93 | 332 | 10.70 | 16.3 | 0.28 |
| IC5021 |            | J203334.0$-$543115 | 3353 74 | 7 | 12.92 | | | | |
| 449 | ESO234$-$050         | J203357.9$-$501132 | 2650 75 $-$1 | 11.19 | 125 | 9.96 | 0.1 | 0.31 |
| ESO234$-$056 |            | J203702.6$-$500538 | 2648 65 | 8 | 15.91 | | | | |
| 450 | IC5039               | J204314.3$-$295112 | 2763 7 | 4 | 9.88 | 110 | 10.78 | 0.9 | 0.6 | 0.66 |
| IC5007 |            | J204334.4$-$294213 | 2783 5 | 7 | 10.09 | | | | |
| 451 | NGC6920              | J204357.4$-$800003 | 2699 40 $-$2 | 8.28 | 75 | 11.13 | 15.6 | 1.4 | 0.36 |
| ESO026$-$005 |            | J204601.4$-$800451 | 2545 75 | 9 | 11.40 | | | | |
| 452 | ESO285$-$048         | J204440.2$-$455843 | 2693 5 | 6 | 10.90 | 173 | 10.13 | 7.5 | 0.32 |
| ESO285$-$051 |            | J204600.8$-$455059 | 2715 35 | 9 | 13.28 | | | | |
| 453 | NGC6958              | J204842.6$-$375951 | 2740 25 $-$4 | 8.38 | 138 | 11.11 | 1.6 | 0.21 |
| 2MASX... |            | J204935.7$-$375240 | 2705 40 $-$3 | 12.39 | | | | | |
| 454 | NGC7029              | J211152.1$-$491701 | 2750 37 $-$5 | 8.53 | 702 | 11.06 | 0.0 | 0.55 |
| ESO235$-$073 |            | J211575.5$-$502105 | 2750 9 | 8 | 12.79 | | | | |
| 455 | NGC7070A             | J213147.3$-$425052 | 2385 26 | 0 | 9.30 | 198 | 10.80 | 0.2 | 0.59 |

Table I: Table. (Contd.)
| No. | Name                        | J2000.0          | $V_{LG}$ ± | T | $K$ | $R_\perp$ | log $L$ | $M_{L_{K}}$ | $M_{L_{K}}$ | log($II$) |
|-----|-----------------------------|------------------|------------|---|-----|----------|---------|-------------|-------------|------|
| 456 | NGC7070                     | J213025.4−430514 | 2392 5 6 10.01 |   |     |          |         |             |             |      |
| 457 | UGC11760                    | J213139.8+022704 | 3491 13 4 10.72 | 64 10.64 | 0.1 | 1.21     |         |             |             |      |
| 458 | NGC7081                     | J213124.1+022929 | 3500 9 3 10.99 |   |     |          |         |             |             |      |
| 459 | ESO287−037                  | J213235.2−440403 | 2661 25 −2 8.57 | 268 11.01 | 23.6 | 10.3 | 0.16     |         |             |             |      |
| 460 | NGC7079                     | J213544.7−635410 | 2989 10 4 8.41 | 343 11.29 | 14.1 | 0.11     |         |             |             |      |
| 461 | ESO107−044                  | J213550.0−635432 | 3071 51 −2 9.86 |   |     |          |         |             |             |      |
| 462 | IC5120                      | J213848.3−642101 | 3201 10 4 10.78 | 336 10.30 | 97.8 | 39.6 | 1.30     |         |             |             |      |
| 463 | NGC7083a                    | J213850.0−641114 | 3271 75 9 15.82 |   |     |          |         |             |             |      |
| 464 | ESO288−013                  | J214150.0−641144 | 1975 10 5 8.82 | 79 10.68 | 39.8 | 39.6 | 1.30     |         |             |             |      |
| 465 | NGC7083                     | J214150.0−641144 | 3291 10 5 10.72 | 336 10.30 | 97.8 | 39.6 | 1.30     |         |             |             |      |
| 466 | NGC7083a                    | J214150.0−641144 | 3291 10 5 10.72 | 336 10.30 | 97.8 | 39.6 | 1.30     |         |             |             |      |
| 467 | ESO404−018                  | J214508.1−641144 | 2681 25 6 8.41 | 312 11.29 | 14.1 | 0.11     |         |             |             |      |
| 468 | NGC7083a                    | J214508.1−641144 | 2681 25 6 8.41 | 312 11.29 | 14.1 | 0.11     |         |             |             |      |
| 469 | ESO288−013                  | J214508.1−641144 | 2681 25 6 8.41 | 312 11.29 | 14.1 | 0.11     |         |             |             |      |
| 470 | NGC7083                     | J214508.1−641144 | 2681 25 6 8.41 | 312 11.29 | 14.1 | 0.11     |         |             |             |      |
| 471 | IC5120                      | J214508.1−641144 | 2681 25 6 8.41 | 312 11.29 | 14.1 | 0.11     |         |             |             |      |
| 472 | ESO288−013                  | J214508.1−641144 | 2681 25 6 8.41 | 312 11.29 | 14.1 | 0.11     |         |             |             |      |
| 473 | NGC7083a                    | J214508.1−641144 | 2681 25 6 8.41 | 312 11.29 | 14.1 | 0.11     |         |             |             |      |
| 474 | NGC7241                     | J21549.9+191356  | 1723 8 4 8.95 | 34 10.48 | 0.9 | 0.8 | 1.28     |         |             |             |      |
| No. | Name                  | J2000.0         | $V_{LG}$ | ±     | T    | $K$ | $R_{\perp}$ | $\log L_{\odot}$ | $M_{L_K}/\odot$ | $M_{L_K}/\odot$ | $\log(II)$ |
|-----|-----------------------|-----------------|----------|-------|------|-----|-------------|------------------|-----------------|-----------------|------------|
| 475 | 2MASX...              | J221805.4–253116| 2827     | 10    | 3    | 11.86 | 113         | 9.83             | 0.1             | 1.46            |
|     | ESO533–010            | J221807.0–254120| 2825     | 5     | 9    | 13.57         |              |                 |                 |                |
| 476 | NGC7259               | J222305.5–285717| 1789     | 37    | 3    | 10.75 | 21          | 9.83             | 29.1            | 27.6            |
|     | ESO467–051            | J222316.4–285848| 1879     | 8     | 6    | 14.21         |              |                 |                 |                |
| 477 | MCG...                | J222741.5–094337| 1786     | 43    | 8    | 13.10 | 33          | 9.08             | 208.3           | 2.64            |
|     | 6dF...                | J222730.5–093959| 1866     | 74    | 9    | 13.59         |              |                 |                 |                |
| 478 | NGC7307               | J223352.5–405558| 2088     | 5     | 6    | 10.41 | 158         | 10.12            | 113.5           | 0.9             |
|     | ESO345–027            | J223414.4–411404| 2178     | 75    | 8    | 12.85         |              |                 |                 |                |
| 479 | NGC7314               | J223546.2–260301| 1511     | 5     | 4    | 8.18  | 99          | 10.67            | 1.2             | 0.9             |
|     | ESO534–001            | J223607.0–261852| 1490     | 5     | 9    | 13.33         |              |                 |                 |                |
| 480 | ESO534–010            | J223851.6–254233| 3207     | 42    | –3   | 9.94  | 371         | 10.62            | 71.3            | 0.27            |
|     | ESO534–015            | J224000.8–260728| 3125     | 74    | 2    | 14.18         |              |                 |                 |                |
| 481 | ESO534–021            | J224434.7–225931| 3247     | 13    | 5    | 11.65 | 314         | 10.08            | 5.6             | 0.36            |
|     | 2MASX...              | J224419.6–232329| 3261     | 31    | 7    | 12.82         |              |                 |                 |                |
| 482 | NGC7416               | J225541.7–052943| 3031     | 10    | 3    | 9.23  | 654         | 10.86            | 12.0            | 1.85            |
|     | MCG...                | J225834.5–045618| 2998     | 74    | 6    | 13.82         |              |                 |                 |                |
| 483 | IC5273                | J225926.7–374210| 1310     | 9     | 6    | 8.75  | 164         | 10.31            | 21.6            | 20.1            |
|     | ESO406–040            | J230022.2–371205| 1263     | 6     | 10   | 14.15         |              |                 |                 |                |
| 484 | NGC7448               | J230003.6+155849| 2449     | 6     | 5    | 8.99  | 317         | 10.79            | 6.5             | 5.9             |
|     | UGC12321              | J230219.0+160140| 2417     | 5     | 4    | 12.07         |              |                 |                 |                |
| 485 | NGC7457               | J230059.9+300842| 1119     | 11    | –3   | 8.17  | 36          | 10.46            | 12.7            | 12.3            |
|     | UGC12311              | J230125.1+301421| 1211     | 8     | 6    | 12.34         |              |                 |                 |                |
| 486 | NGC7456               | J230210.4–393410| 1212     | 8     | 6    | 9.35  | 310         | 10.03            | 4.2             | 0.35            |
|     | LCRS...               | J230153.2–382941| 1201     | 30    | 10   | 12.31         |              |                 |                 |                |
| 487 | ESO027–021            | J230419.1–792757| 2308     | 20    | 1    | 10.56 | 46          | 10.13            | 8.4             | 6.2             |
|     | [SOM2000]...          | J230415.6–793258| 2262     | 10    | 9    | 12.75         |              |                 |                 |                |
| 488 | UGC12347              | J230512.2+185205| 1899     | 21    | 10   | 12.32 | 78          | 9.43             | 0.7             | 0.29            |
|     | UGC12344              | J230460.0+184212| 1895     | 5     | 8    | 12.80         |              |                 |                 |                |
| 489 | NGC2573B              | J230732.8–890659| 2311     | 24    | 10   | 12.06 | 12          | 9.70             | 0.8             | 0.75            |
|     | NGC2573A              | J231227.2–890734| 2328     | 75    | 3    | 12.60         |              |                 |                 |                |
| 490 | NGC7541               | J231443.9+043204| 2894     | 8     | 5    | 8.33  | 37          | 11.25            | 0.0             | 1.11            |
|     | NGC7537               | J231434.5+042954| 2893     | 5     | 4    | 10.19         |              |                 |                 |                |
| 491 | NGC7625               | J232030.1+171332| 1878     | 8     | 1    | 8.86  | 177         | 10.60            | 0.5             | 0.50            |
|     | UGC12564              | J232153.6+172612| 1888     | 5     | 10   | 13.52         |              |                 |                 |                |
| 492 | ESO536–003            | J232216.0–234204| 1774     | 75    | 6    | 13.58 | 62          | 8.79             | 627.0           | 1.73            |
|     | 2MASX...              | J232217.9–233306| 1702     | 74    | 8    | 14.51         |              |                 |                 |                |
| 493 | NGC7667               | J232423.1–000629| 2892     | 7     | 9    | 12.22 | 15          | 9.64             | 1.6             | 1.1             |

Table I: **Table.** (Contd.)
Table I: Table. (Contd.)

| No. | Name          | J2000.0       | $V_{LG}$ | ±     | T     | $K$  | $R_\perp$ | log $L_\odot$ | $M_\odot$ | $M^*_\odot$ | log(II) |
|-----|---------------|---------------|----------|-------|-------|------|-----------|---------------|-----------|-------------|---------|
| 494 | NGC7637       | J232627.7−815442 | 3447 | 55   | 5    | 9.60 | 31          | 10.83       | 33.8     | 32.7        | 1.42    |
| 495 | ESO012−001... | J232555.4−815241 | 3195  | 16   | 5    | 12.02 |              |              |          |             |         |
| 496 | UGCA439       | J232632.8+181560 | 1834  | 60   | 9    | 12.78 | 137        | 9.01         | 828.7    | 0.50        |         |
| 497 | EXG...        | J232554.1+183245 | 1762  | 75   | 9    | 15.66 |              |              |          |             |         |
| 498 | NGC7676       | J232901.7−594300 | 3250  | 35   | −3   | 9.39 | 410        | 10.88       | 70.0     | 0.31        |         |
| 499 | ESO148−009    | J232456.9−594720 | 3354  | 74   | 5    | 13.31 |              |              |          |             |         |
| 500 | NGC7694       | J233006.7−592753 | 2995  | 21   | −5   | 9.48 | 559        | 10.78       | 37.3     | 0.31        |         |
| 501 | NGC7695       | J232729.2−600952 | 3053  | 74   | 3    | 12.61 |              |              |          |             |         |
| 502 | ESO240−010    | J233743.6−473013 | 3143  | 45   | −2   | 8.65 | 302        | 11.20       | 14.6     | 11.2        | 0.16    |
| 503 | ESO240−013    | J233927.0−474629 | 3223  | 10   | 3    | 10.63 |              |              |          |             |         |
| 504 | NGC77126      | J233551.6+233707 | 3319  | 5    | 2    | 10.47 | 383        | 10.53       | 4.5      | 3.2         | 1.67    |
| 505 | UGC12675      | J233438.3+231328 | 3301  | 5    | 4    | 12.00 |              |              |          |             |         |
| 506 | NGC7714       | J233614.1−021519 | 3000  | 9    | 3    | 9.74 | 24         | 10.66       | 1.0      | 0.4         | 0.95    |
| 507 | NGC7715       | J233622.1−024313 | 2960  | 16   | 9    | 12.70 |              |              |          |             |         |
| 508 | ESO240−010    | J233743.6−473013 | 3143  | 45   | −2   | 8.65 | 302        | 11.20       | 14.6     | 11.2        | 0.16    |
| 509 | ESO240−013    | J233927.0−474629 | 3223  | 10   | 3    | 10.63 |              |              |          |             |         |
| 510 | NGC7721       | J233848.6−063104 | 2173  | 5    | 5    | 8.67 | 404        | 10.81       | 8.8      | 5.0         | 0.23    |
| 511 | MCG...        | J233848.9−054448 | 2208  | 11   | 9    | 12.60 |              |              |          |             |         |
| 512 | NGC7731       | J234129.1+034424 | 3084  | 11   | 1    | 10.62 | 19         | 10.59       | 0.2      | 0.55        |         |
| 513 | NGC7732       | J234133.9+034330 | 3104  | 17   | 7    | 10.77 |              |              |          |             |         |
| 514 | NGC7741       | J234354.4+260432 | 1017  | 5    | 6    | 9.61 | 181        | 9.77        | 0.1      | 0.31        |         |
| 515 | UGC12732      | J234039.9+261411 | 1016  | 5    | 8    | 13.35 |              |              |          |             |         |
| 516 | NGC7751       | J234658.3+065142 | 3456  | 9    | 0    | 9.60 | 25         | 10.80       | 18.4     | 18.3        | 1.48    |
| 517 | ESO...        | J234650.7−065131 | 3259  | 6    | 10   | 14.13 |              |              |          |             |         |
| 518 | NGC7755       | J234751.8−303119 | 3001  | 7    | 5    | 8.96 | 285        | 10.95       | 21.4     | 7.7         | 0.78    |
| 519 | APMUKS...     | J234650.7−301105 | 2926  | 30   | 9    | 15.63 |              |              |          |             |         |
| 520 | ESO472−006    | J235404.5−252716 | 3091  | 40   | 9    | 11.74 | 102        | 10.01       | 0.4      | 0.37        |         |
| 521 | APMBGC...     | J235440.2−252919 | 3085  | 26   | 5    | 12.77 |              |              |          |             |         |
| 522 | NGC7793       | J235749.8−323528 | 247   | 10   | 7    | 6.85 | 165        | 9.59        | 29.6     | 5.7         | 0.53    |
Acknowledgments

This work was supported by the Russian Foundation for Basic Research (grant nos. 07–02–00005, 08–02–00627, and 07–02–00792) and the joint grant (no. 06–02–04017) of Deutsche Forschungsgemeinschaft and Russian Foundation for Basic Research. We acknowledge the use of the HyperLeda database (http://leda.univ-lyon1.fr) and NASA/IPAC Extragalactic Database (NED) (http://nedwww.ipac.caltech.edu/). We thank V. E. Karachentseva for finding the magnitudes and types for a large number of dwarf galaxies.

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