Optical and *I*-band surface photometry of spiral galaxies.^{*,**}

I. The data

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Abstract. — We present *V*- and *I*-band CCD surface photometry on 234 inclined Sa-Sd galaxies, completed by similar data in *B* and *R* for a reduced subsample. In this first paper of a series, the reduction of the data is discussed, and several comparisons are made with other recent works. Radial profiles are presented for the surface brightness and the characteristics of ellipses fitted to isophotes; global, effective, and isophotal parameters are listed. All the results are available in electronic form.

Key words: galaxies: spiral; galaxies: photometry

1. Introduction

In the last decade, visible-domain surface photometry on galaxies has significantly benefited from the availability of larger and better CCDs; one of the aspects of this evolution is the redward trend in sensitivity, which has reached the *I* band, thus filling in the gap with the *J*, *H*, *K* near-infrared (NIR) bands, where receptor technology is presently improving at a quick pace. As a result, a well-sampled frequency coverage is now available from *U* to *K*, allowing an easy buildup of large homogeneous sets of data. Recently, the role of the *I* band has been pivotal, since at this wavelength: a) extinction by dust is significantly reduced with respect to *V* and blueward, and the light is a slightly better representative of the mass distribution of evolved stars, b) the sky brightness is lower than in the NIR, and c) the observations rely on visible-band CCDs, whose availability is still much wider than the NIR arrays. Although several recent works have taken advantage of the “panchromatic” possibilities, many others have focused on the *I* band.

The rationales behind these observations span a variety of specific purposes; a few examples are: quantitative morphology, study of extinction or population effects, applications to rotation and distance-indicator relations. Ta-

ble 1 sums up the main characteristics and applications of several observational works published in the last dozen years.

The initial aim of the present study was to contribute to several of the above-cited problems, mainly: a) a detailed study of the morphology and the decomposition into stellar components, and b) the determination of mass models and rotation curves. We thus performed surface photometry on a total of 234 spiral galaxies observed mostly in *V* and *I* but also, as a side product, in *B* (for 59 objects) and/or *R* (for only 16 objects).

This paper is devoted to the presentation of the data. It is organized as follows: Sect. 2 explains the characteristics of the samples and describes the observations, Sect. 3 gives a detailed account of the reduction procedures; in Sect. 4, comparison are made with other sources; Section 5 sums up and presents the planned applications.

2. Sample of objects and observations

2.1. Sample

Our initial aim was to perform detailed surface photometry on a statistically significant sample of nearby spirals spanning a range of morphological type and intrinsic luminosity. An additional requirement was the possibility to separate the luminous contributions of the bulge and disk components with the most relevant a priori constraints, and this led to restrict the selection to inclined and unbarred (or mildly barred) galaxies.

We first defined a volume-limited set of spirals adapted to the field and resolution of the receptors available, and

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*Based on observations collected at the Observatoire de Haute-Provence

**Tables 3 and 5 are proposed in electronic form only; Tables 2 through 5 are available from the CDS, Strasbourg (anonymous ftp to 130.79.128.5)

Table 1. A selection ^(a) of published CCD surface photometry on spirals

Reference	<i>N</i>	Bands	Main applications
Kent (1984)	105 ^(b)	<i>g, r</i>	Morphology, B+D decompositions (Kent 1985)
Kent (1986, 1987, 1988)	67	<i>r</i>	Dark matter distribution
Pierce (1988)	≈ 300	<i>B, R, I</i>	Distances to clusters, determination of <i>H</i> ₀ (Pierce & Tully 1988)
Gavazzi et al. (1990, 1994a, 1994b, 1995a)	435	<i>V</i>	Structure, stellar content, galaxy formation, TF relation (Gavazzi 1993; Gavazzi et al. 1995b)
Freudling et al. (1991)	86	<i>I</i>	Cluster-region TF relation, deviation from Hubble flow
Han (1991, 1992a)	284	<i>V, I</i>	Internal extinction (Han 1992b); Peculiar cluster motions (Han 1992c, 1992d); classification (Han 1995)
Willick (1991)	541	<i>r</i>	TF relation, motions in the local Universe (Willick et al. 1995)
Courteau (1992, 1996)	349	<i>r</i>	TF relation, motions in the local Universe (Courteau et al. 1993); B+D decompositions, structure (Courteau et al. 1996)
Mathewson et al. (1992)	1355	<i>I</i>	TF relation; mass models (Buchhorn & Mathewson ^(c)); internal extinction (Byun 1992, 1993; Byun et al. 1994); B+D decompositions (Byun & Freeman 1995)
Lu et al. (1993)	≈ 150	<i>I</i>	Local-Group peculiar velocity, Malmquist bias
Barteldress & Dettmar (1994)	27	<i>g, r</i>	Structure of edge-on disks
de Jong & van der Kruit (1994)	86	<i>B, V, R, I</i> ^(d)	Colors, internal extinction (de Jong 1995); B+D decomposition (de Jong 1995)
Giovanelli et al. (1994, 1995)	1235	<i>I</i>	Photometric properties, internal extinction
Wozniak et al. (1995)	36	<i>B, V, R, I</i> ^(b,e)	Multiple triaxial structures and kinematics
Frei et al. (1996)	113 ^(b)	<i>B_J, R/g, r, i</i>	Automatic classification

Notes. ^(a) selection criteria: “regular” S-type galaxies, samples of at least 20 objects, broad bands from *B* to *I*; ^(b) includes Es and/or S0s; ^(c) cited by Freeman (1992); ^(d) completed by *H*- and *K*-band surface photometry; ^(e) completed by H α surface photometry.

Fig. 1. Profile comparison in *B* with JK94. The graphs show the magnitude difference $\Delta\mu_B = \mu_B(\text{ours}) - \mu_B(\text{JK94})$, as a function of our surface brightness μ_B . The error bars refer to our measurements ($\pm 1\sigma$ of the error due to sky-level uncertainty), and are drawn only when larger than ± 0.5 mag arcsec⁻². The calibration-quality parameter *Q* is indicated

Fig. 2. Profile comparison in *V* (for details, see Capt. of Fig. 1); NGC 3701 is compared to Han (1991), all other galaxies to JK94

to the average seeing conditions at the Observatoire de Haute-Provence (OHP). To begin with, we applied the following selection criteria to the galaxies listed in the *LED*A database:

- morphological type *T* from 1 to 7 (Sa to Sd), and sub-type A or AB (no bar or intermediate bar);
- diameter at $\mu_B = 25 \text{ mag arcsec}^{-2}$ limited to $D_{25} < 8'$ (the resulting bias against objects with large apparent dimensions concerns less than 10% of the sample);
- ellipticity ($\equiv 1 - b/a$) of the outer isophotes in the range $0.25 < \epsilon_{25} < 0.7$. For $\epsilon_{25} \simeq 0.25$, the inclination is $\approx 41^\circ$, a value considered a lower limit for the differentiation of the *apparent* flattenings of the bulge and disk components; for $\epsilon_{25} \simeq 0.7$, the projected thickness of the disk onto the plane of the sky is still large with respect to the dust layer, if any;
- a declination $10^\circ < \delta < 80^\circ$, suited to OHP, with a zone of avoidance at low Galactic latitude defined by $-20^\circ < b_{\text{II}} < 20^\circ$.

We completed the above criteria by a first limit on the absolute luminosity¹, $M_B < -18.5$, which corresponds to bright galaxies; with an apparent blue magnitude $B_T < 14.5$, this defines a volume of radius 39.8 Mpc, corresponding to a radial velocity $cz < 2986 \text{ km s}^{-1}$, with $H_0 = 75 \text{ km s}^{-1} \text{ Mpc}^{-1}$, and after a correction of 220 km s^{-1} for the Virgocentric infall, from Tammann & Sandage (1985). The so-defined sample (hereafter Sample 1) contains 141 galaxies.

At this stage, we defined a second range in luminosity, aimed at extending Sample 1 faintward, namely $-18.5 < M_B < -17.5$; with the same limit on B_T , this corresponds to a volume of radius 25.3 Mpc ($cz < 1900 \text{ km s}^{-1}$). This sample is populated by only 29 objects (Sample 2).

The merging of Samples 1 and 2 gathers 160 galaxies, of which 157 have been observed; from these, we

¹Our estimate of the absolute magnitude takes into account the Galactic extinction only: due to the uncertainty on the still-debated internal extinction, no correction for this has been applied.

Fig. 3. Profile comparison in *R* (for details, see Capt. of Fig. 1); NGC 1024, NGC 1589, NGC 6314, NGC 7448, and NGC 7479 (*bottom right*) are compared to Kent (1984, 1986, 1987, 1988) after a correction from μ_r to μ_R (see Sect. 4.1, c); other galaxies are compared to JK94

discarded 20 objects, for either: a) the proximity of a too bright star, or, b) the presence of a companion distorting the outer isophotes too significantly, or, c) an excessive seeing dimension. Then, the number of objects dropped to 137, representing $\simeq 86\%$ of the sample. Actually, we have observed 97 more objects (Sample 3), either for their individual interest, or for side projects (for example, 44 strongly barred galaxies), and we have included these additional data in the present paper.

2.2. Observations

We have used the camera attached to the *f*/6 Newton focus of the 1.20-m telescope at OHP, during six runs between October 1991 and January 1995. For the first run, the receptor was a RCA 512×320 CCD; its main characteristics were a quantum efficiency of $\simeq 50\%$ at *B* and $\simeq 30\%$ at *I*, a read-out noise of $55 e^-$, and a pixel size of $0.83''$, providing a total field of $6.9' \times 4.3'$. For all the subsequent runs, the receptor was a Tektronix 512×512 CCD, with an efficiency of $\simeq 65\%$ and $\simeq 50\%$ at *B* and *I*, respectively, a read-out noise of $10 e^-$, a pixel size of $0.78''$, and a field of $6.5' \times 6.5'$.

More details on the CCDs can be found in Goillandeau et al. (1992); the telescope itself and the camera are described in the on-line OHP Manual, which is available on the WWW (<http://www.obs-hp.fr>).

We used Cousins *BVRI* filters which have been shown by Chevalier & Ilovaisky (1990) to be very close to the original Cousins system (Cousins 1976; Bessel 1979). Almost all observations were secured in the *V* and *I* bands; additional data in *B* and *R* were also obtained for a reduced subsample, for a more detailed study on selected objects.

Most objects were observed only once, except for the following cases:

- large angular dimensions; then, a two- or three-frame mosaicing was performed: we used common stars for the centering, and common areas for the determination of the mean photometric offset;
- saturation, of either the galaxy center or a bright superposed star;
- atmospheric conditions of insufficient quality.

The atmospheric conditions were variable in a wide range. When non photometric, we observed preferentially galaxies with available photoelectric calibrations and, as a second choice, galaxies at a small angular distance of calibrated objects. We also observed calibrated star clusters (see Sect. 3.2). The seeing disk in the *I* band was between $\simeq 1.8''$ and $\simeq 4.0''$ (FWHM), with a median value of $2.8''$.

In the Appendix, Table 2 lists catalog elements for our observed galaxies, and specifies their membership to the above-defined samples; Table 3 presents the log of

Fig. 4. Profile comparison in *I* (for details, see Capt. of Fig. 1); NGC 3701 is compared to Han (1991), NGC 7339 to Mathewson et al. (1992), and the other galaxies to JK94

observations, including the exposure time, the seeing dimension, and the estimated quality of the calibration (Sect. 3.2) for each filter.

3. Data reduction

3.1. Flatfielding and sky-brightness determination

The preliminary processing was standard, and we used the ESO-Midas reduction package. Bias frames were obtained frequently, and showed no significant level variation within a night. Flat fields were made on either a uniformly illuminated area of the dome, or the twilight sky.

For each frame, the sky brightness was determined by averaging the mean values measured within several (usually four) areas around the galaxy; then, the rms deviation of these individual values provided an estimate of the combined uncertainties arising from a) the imperfect result of the flatfielding, and, b) the very determination of the sky level. For the sake of clarity, we will subsequently refer to both as the “sky-level uncertainty”. This is typically 0.5%

(and within 1% for most frames), with a slightly lower quality at *I* with respect to the other bands.

Typical values of the sky brightness were 21.1 mag arcsec⁻² in *B*, 20.1 in *V*, 20.2 in *R*, and 19.1 in *I*.

3.2. Photometric calibration

Different methods have been used for the frame calibration, which are described below:

- when available, we used the aperture-photometry data from the catalogs of Longo & de Vaucouleurs (1983), and de Vaucouleurs & Longo (1988), completed by more recent published data, collected and corrected for individual biases by Ph. Prugniel (Prugniel et al. 1993). For each galaxy, we determined our zero point by simulating aperture photometry on our images and by calculating the mean difference with the published values after a 2σ rejection.

The uncertainty on the calibration obtained this way comes from: a) the often small number of available

Fig. 5. Comparison of our integrated magnitudes with the RC3 values. From top to bottom: B_T (44 objects), V_T (117 objects), and I_T (37 objects). The vertical error bars represent our combined uncertainties on the sky determination and the photometric calibration

Fig. 6. Comparison of our integrated magnitudes to those of JK94, for 13 objects in common, in one or more passbands. Triangles: *B*; open squares: *V*; crosses: *R*; and open circles: *I*

measurements on a galaxy, and the shortage of large apertures, and b) the variable quality of the raw data entering these catalogs.

- we frequently observed standard fields of star clusters: M13 (Forbes & Dawson 1986); M67 (Chevalier & Ilovaisky 1991); NGC 2264, NGC 2419, NGC 4147, and NGC 7790 (Christian et al. 1985). All these cited papers used the Cousins system.
- when no aperture photometry was available, and when the weather conditions were not totally photometric, we made an approximate calibration from nearby, already calibrated objects: either standard fields or galaxies, which were close in both time and position.

For all galaxies, a parameter Q estimating the quality of the calibration has been defined. When aperture-photometry was available, Q was directly derived from the scatter of the residuals; when standard objects were used, Q was evaluated from the fluctuations of the calibration constants they provided. A scale has been defined so that $Q = 1$ through 5, for an estimated accuracy in the ranges $\lesssim 0.05$, $0.05\text{--}0.1$, $0.1\text{--}0.3$, $0.3\text{--}0.5$, and $\gtrsim 0.5$ mag, respectively.

3.3. Isophote analysis and derivation of the profiles

In a first step, superposed stars, if any, were removed from the calibrated images by a dedicated routine, and the ESO-Midas ellipse-fitting program was run: at a brightness level μ , this yielded the following isophote parameters: semi-major axis r , ellipticity ϵ , and position angle PA, all being allowed to vary.

Fig. 7. Comparisons of our isophotal diameters D_{25} (in arcsec) to those from *LEDA*

Fig. 9. Ellipticities at $\mu_I = 23.5$, compared to *LEDA* values at $\mu_B = 25$

Fig. 8. Comparisons of position angles to those from *LEDA*. Angles are in degrees, North through East. Crosses: galaxies for which $\epsilon < 0.2$

We note that this program is based on an algorithm which iteratively minimizes a χ^2 related to the residuals in radius between the isophote and the calculated ellipse (Bender & Möllenhof 1987). It is worth mentioning that, when the isophote shape departs significantly from a pure ellipse, different algorithms can lead to geometrical parameters which are not in tight agreement (see, e.g., Prugniel 1989); in this case, however, the difference in the brightness profiles remains small.

Next, in order to enhance the S/N ratio at low levels, we actually averaged the surface brightnesses within elliptical annuli of increasing thickness outward. In order to do that: a) we accurately determined the galaxy center by a gaussian fitting to the central peak, and we assigned it, as a common center, to all isophotes; b) we adopted as references the orientation $PA(r)$ and ellipticity $\epsilon(r)$ of the calculated ellipses and, at radius r , we averaged the surface brightness μ within two ellipses with semi-major axes separated by $0.06r$ (with a minimum distance of one pixel); c) we repeated this for each band, with a common set of reference ellipses: those in *I*, when available (for its slightly better mass-tracing properties), or the redder other band, when not.

Histograms of uncertainties on the surface brightnesses showed that: a) at $\mu_B = 25$, the $\pm 1\sigma$ error bar is smaller than ± 0.3 mag for 95% of the galaxies, with an average value of ± 0.2 mag; b) at $\mu_V = 24$, corresponding values are 0.5 and 0.2, respectively; and at $\mu_I = 23.5$, they are also 0.5 and 0.2 mag with, however, a wider and slightly more asymmetric histogram. Brightness profiles (uncorrected for extinction), and ellipse parameters for 230 objects are presented in Table 5 and Fig. 10 of the Appendix.

3.4. Determination of isophotal diameters

The D_{25} diameter (major axis of the isophote $\mu_B = 25$) has been calculated for the 44 galaxies observed in *B*. In the other passbands, diameters D_{iso} have been determined, at brightness levels defined to correspond roughly to $\mu_B = 25$: these are $\mu_V = 24$, $\mu_R = 24$, and $\mu_I = 23.5$ (Table 4).

3.5. Determination of mean geometrical parameters

The flattening and orientation of the galaxies have been determined on an outer isophote of the *I* image, when available: at $\mu_I = 23.5$, $\mu_I = 22$, or $\mu_I = 21$, depending on the flatness of the background and/or the overall quality of the image. When no *I* data was available, the determination has been made on the *V* image at $\mu_V = 24$. The geometrical parameters and the conditions of their measurement are listed in Table 4.

3.6. Determination of integrated and effective parameters

The integrated magnitude m_T has been calculated in the following way: beyond the outermost point reached by the profile determination, r_{out} , the brightness distribution has been extrapolated by an exponential function, with ellipticity and orientation of the isophotes fixed to the values calculated at r_{out} ; with respect to the magnitude integrated within r_{out} , this extrapolation adds up, typically, ≈ 0.1 mag, with less than 10% of the cases for which this is > 0.2 mag. In each passband, the formal uncertainty δm_T on m_T depends on: a) the error on $\mu(r_{\text{out}})$ due to the uncertainty on the sky level, and, b) the error on the slope of the extrapolation. Although the latter is uneasy to estimate (it depends on the shape of the profile), we have found that it does not represent the major part of δm_T ; limited to the error due to the sky, we calculated the mean rms uncertainty on the integrated magnitude: 0.05 mag in *B*, 0.04 in *V*, 0.03 in *R*, and 0.07 in *I*; finally, taking into account all contributions, the total uncertainty on m_T is estimated to be $\simeq 0.1$ mag for most objects.

We have also determined parameters related to the effective isophote encompassing half the total luminosity of the galaxy: its semi-major axis r_e , and the mean surface brightness $\langle\mu\rangle_e$ within.

The parameters m_T , r_e , and $\langle\mu\rangle_e$ are listed in Table 4 of the Appendix.

4. Comparison with other works

4.1. Photometric profiles

We have compared our results with those of other authors who did not necessarily adopt the same technique of profile determination: some of them calculated the average brightnesses on ellipses whose flattening and orientation were left as free parameters (as we did), some others assigned constant values to these. For a comparison as significant as possible, we have recalculated, when relevant, our profile with the same ellipse parameters as the other source. For 15 objects in one or more passbands, magnitude differences as a function of the brightness level are shown in Figs. 1 to 4.

a) *B* band: we have six objects in common with de Jong & van der Kruit (1994; hereafter JK94), who used the

Johnson system, almost identical to the Cousins system in this band (no systematic offset has been applied for the comparison); their profiles were derived on ellipses of fixed flattening and orientation. The comparison involves mostly well-calibrated objects ($Q = 1$ for five out of six), and shows a good agreement with a mean difference of $0.01 \text{ mag arcsec}^{-2}$, with a rms scatter of 0.08 (Fig. 1).

b) *V* band: 10 objects in common with JK94 (Johnson system, no offset applied); the mean difference is $0.03 \text{ mag arcsec}^{-2}$, with a scatter of 0.11; one galaxy with Han (1991), who used the Cousins system (Fig. 2).

c) *R* band: three objects in common with JK94 (Cousins system), and seven with Kent (1987); for the latter, the data are presented in the Gunn *r* magnitudes for which Bell & Vandenberg (1987) give the correspondence with the Cousins R_C : their formula can be simplified, by dropping a small color term, to $R_C = r - 0.344$, and the data we have used were corrected accordingly. Many poorly calibrated objects enter the comparison (Fig. 3).

d) *I* band: one galaxy in common with Mathewson et al. (1992), and 10 with JK94 (both in the Cousins system). There are three very discrepant objects: for NGC 3041, there is an obvious large difference in the sky-level determinations; for NGC 6012 the problem can arise from the presence of two very bright stars nearby; and for NGC 7177 there is a large uncertainty in our calibration ($Q = 4$). There is one additional object in common with Han (1991), also in the Cousins system. The comparisons are shown in Fig. 4.

4.2. Integrated magnitudes

We have compared our B_T , V_T , and I_T values to the RC3 (de Vaucouleurs et al. 1991), and to post-RC3 data (provided by the *LED*A database); no comparison has been attempted in *R*, where there are only four objects in common. The results are displayed in Fig. 5; for 44 galaxies belonging to our *B* sample, we found a mean difference $\Delta B_T = B_T(\text{ours}) - B_T(\text{RC3})$ of 0.08 mag, with a rms scatter of 0.23 mag; in *V*, we found $\Delta V_T = 0.03$ (rms = 0.30) for 117 objects, and in *I*, $\Delta I_T = 0.03$ for 37 objects (rms = 0.25).

This difference can be considered as small, compared to the uncertainty on a single measurement. Indeed, for the RC3, this is of the order of $\Delta B_T \approx 0.16$ mag: Buta et al. (1995) estimate that the internal error is typically 0.05 mag, and that the external errors are at least 0.13 mag; for the present comparison, the contributions of the errors on the $B - V$ and $V - I$ colors, although limited, have also to be included.

In the small systematic difference that we found, a part may come from incomplete field-star correction in

aperture photometry, but it is difficult to estimate to which degree.

We have also compared our total magnitudes in *B*, *V*, *R*, and *I*, to those given by JK94, for the 13 objects in common (Fig. 6); like ours, his determinations come from extrapolation by an exponential. We found mean differences $\Delta m_T = m_T(\text{ours}) - m_T(\text{JK94})$ of: in *B*, -0.01 mag (rms = 0.10); in *V*, 0.08 (rms = 0.17); in *R*, 0.08 (rms = 0.04); and in *I*, 0.07 (rms = 0.15).

4.3. Isophotal parameters

Figure 7 presents our D_{25} diameters (i.e., the major axis of the isophote $\mu_B = 25$), compared to the values listed in the *LED*A database; after a 2σ rejection, the mean difference shows a zero mean value, with a scatter of $23''$. We note a larger scatter for large diameters, this may be due to either a deficiency of very large apertures for photoelectric observations, or a poorer sky-level determination for CCDs with limited fields.

Our determinations of the position angle of the outer isophotes is tightly correlated to the values in the literature (Fig. 8). The mean difference is 0 (rms = 5°) after elimination of highly discrepant cases (less than 7% of the total sample).

The comparison of the ellipticity at $\mu_I = 23.5$ (i.e., $\mu_B \approx 25$) to ϵ_{25} shows a large scatter, a characteristic already noted by Gavazzi et al. (1994a). Not unexpectedly, the scatter is much larger at small ellipticities.

5. Discussion

We have performed multi-color surface photometry on 234 spiral galaxies, and presented integrated and isophotal parameters, together with luminosity profiles for 230 of them. We have been careful to provide realistic estimates of the uncertainties on the results; comparison with other sources has shown a globally satisfactory agreement.

These data add up to a growing volume of published CCD surface photometry; our contribution is mostly in the domain of nearby, regular field spirals. Statistical significance of our sample is claimed for only a part of it. Our observations were carried out within the scope of the following applications:

1. main-component separation: preliminary results in the visible range (Héraudeau & Simien 1995), as well as in the NIR (Héraudeau et al. 1995), show that a more physically sound separation of the bulge and disk components is often allowed by the taking into account of the spiral-arm population.
2. mass models and rotation curves: the above bulge, disk, and arms decomposition can lead to a more accurate estimate of the visible-mass contribution to the circular rotation, and hence can help in constraining the unseen matter.

3. bulge kinematics: as a parallel program, we have obtained long-slit absorption spectra on a fair sample of bulge components (Héraudeau & Simien 1996), and surface photometry provides the space density of light (and mass) necessary for a dynamical modelling.

Some of these applications are in progress, and will be detailed in subsequent papers.

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A. Appendix. Presentation of the results

a) Table 2: relevant catalog elements for our program galaxies. Columns are as follows:

- Cols. (1), (2): object identification,
- Col. (3): coded morphological type,
- Col. (4): full morphological type,
- Cols. (5), (6): coordinates,
- Col. (7): *B*-band integrated magnitude,
- Col. (8): diameter at $\mu_B = 25$ mag arcsec $^{-2}$, in arcmin,
- Col. (9): ellipticity at $\mu_B = 25$,
- Col. (10): heliocentric radial velocity, in km s $^{-1}$,
- Col. (11): absolute magnitude, from B_T corrected for Galactic extinction, and from the radial velocity corrected for Virgocentric infall (see Sect. 2.1); when the corrected cz is smaller than 500 km s $^{-1}$, however, we adopted a distance modulus relying on other parameters provided by *LED*A: this is the case for NGC 762, NGC 2976, and NGC 6503.
- Col. (12): membership to Samples 1, 2, and 3 (see Sect. 2.1).

Columns (3) to (10) are from the *LED*A database.

b) Table 3: observation log.

- Cols. (1), (2): object identification,
- Col. (3): filter (one line for each passband), referring to columns rightward,
- Col. (4): exposure time in seconds,
- Col. (5): seeing FWHM in arcsec,
- Col. (6): date of observing run,
- Col. (7): notes.

c) Table 4: photometric results.

- Cols. (1), (2): object identification,
- Col. (3): position angle of major axis (North through East), measured at a brightness level specified in Col. (5),

- Col. (4): isophote ellipticity, measured as specified in Col. (5),
- Col. (5): code for the determinations of PA and ϵ ; measurement in *I* at $\mu_I = 23.5$ ($C = 1$), or $\mu_I = 22$ ($C = 3$), or $\mu_I = 21$ ($C = 4$); measurement in *V* at $\mu_V = 24$ ($C = 2$),
- Col. (6): photometric filter (one line for each pass-band), referring to columns rightward,
- Cols. (7), (8): integrated magnitude, and its rms error due to sky-level uncertainty,
- Cols. (9), (10): semi-major axis (in arcsec) of the effective isophote containing half the total luminosity of the galaxy, and its rms error due to sky-level uncertainty,
- Cols. (11), (12): mean surface brightness (in mag arcsec⁻²) within the effective isophote, and its rms error due to sky-level uncertainty,
- Cols. (13), (14): isophotal diameter (in arcsec), i.e., major-axis of isophote at $\mu_B = 25$, or $\mu_V = 24$, or $\mu_R = 24$, or $\mu_I = 23.5$, and its rms error due to sky-level uncertainty,
- Col. (15): quality parameter for photometric calibration (see Sect. 3.2).

d) Table 5: parameters shown in Fig. 10.

Tables 3 and 5 are proposed in electronic form only. Tables 2 through 5 are available from the CDS, Strasbourg (anonymous ftp to 130.79.128.5).

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Table 2. Catalog elements

#	Object	<i>T</i>	Type	α_{1950}	δ_{1950}	B_T	D_{25}	ϵ_{25}	v_{helio}	$-M_B$	S
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
001	IC 163	8	SBcd	01 48 58.9	20 41 12	13.60	1.8	0.53	2745	19.52	3
002	IC 167	5	SBc	01 50 51.6	21 53 22	13.60	2.8	0.34	2935	19.67	1
003	IC 277	4	SBc	02 59 34.4	02 45 06	13.86	1.3	0.26	2850	19.30	3
004	IC 284	8	Scd	03 05 49.9	42 21 11	12.51	4.1	0.49	2722	21.12	3
005	IC 356	2	Sb	04 07 15.7	69 48 00	11.52	5.3	0.26	888	20.30	3
006	IC 467	5	SBc	07 29 29.8	79 53 00	13.20	3.0	0.60	2042	19.68	1
007	IC 529	5	Sc	09 18 02.0	73 46 47	12.61	3.7	0.54	2258	20.36	1
008	IC 851	5	Sc	13 08 19.9	21 04 33	13.96	1.0	0.59	2615	19.07	1
009	IC 1014	8	SBcd	14 28 04.3	13 48 08	13.80	2.8	0.26	1290	17.86	3
010	IC 1151	5	SBc	15 58 18.5	17 27 23	13.44	2.4	0.66	2169	19.35	3
011	IC 1251	6	Sc	17 10 17.2	72 24 57	14.59	1.5	0.32	1167	17.25	2
012	IC 2166	4	SBc	06 26 28.7	59 04 53	13.51	3.0	0.29	2692	19.93	1
013	NGC 23	1	SBb	00 09 38.0	25 53 43	12.82	2.1	0.32	4565	21.43	3
014	NGC 63	5	Sc	00 17 30.0	11 25 18	12.34	1.7	0.34	1166	18.89	1
015	NGC 485	5	Sc	01 21 12.0	06 59 32	13.91	1.7	0.67	2252	18.67	3
016	NGC 532	3	Sb	01 25 01.3	09 14 20	13.93	2.4	0.70	2374	18.79	3
017	NGC 658	3	Sb	01 41 53.8	12 34 39	13.10	3.0	0.47	2986	20.14	1
018	NGC 660	1	SBab	01 42 45.3	13 37 07	11.79	8.1	0.63	851	18.74	3
019	NGC 672	6	SBc	01 47 36.5	27 24 32	11.33	7.2	0.65	422	19.07	3
020	NGC 691	4	Sbc	01 50 25.1	21 44 07	12.26	3.4	0.28	2663	20.80	1
021	NGC 772	3	Sb	01 59 03.8	18 58 55	10.94	7.5	0.42	2456	21.93	1
022	NGC 803	5	Sc	02 03 28.8	16 00 28	12.99	3.0	0.57	2100	19.53	1
023	NGC 918	5	SBc	02 25 33.8	18 28 29	13.07	3.5	0.41	1509	18.78	1
024	NGC 925	7	SBcd	02 26 58.8	33 33 21	10.58	11.1	0.44	553	19.51	3
025	NGC 949	3	Sc	02 30 30.3	37 06 50	12.40	2.8	0.38	611	17.98	2
026	NGC 959	8	Scd	02 32 05.6	35 28 23	12.94	2.3	0.39	603	17.37	3
027	NGC 1003	6	Sc	02 38 57.4	40 51 06	11.91	5.7	0.60	626	18.66	3
028	NGC 1024	2	Sab	02 38 56.0	10 49 33	13.09	3.9	0.63	3531	20.56	3
029	NGC 1032	0	Sa	02 39 08.1	01 04 19	12.63	3.3	0.66	2722	20.39	3
030	NGC 1055	3	SBb	02 41 29.3	00 25 15	11.25	7.6	0.61	996	19.48	3
031	NGC 1056	1	Sa	02 42 30.8	28 33 13	13.11	2.4	0.52	1544	18.94	1
032	NGC 1137	3	Sb	02 53 46.7	02 56 30	13.15	2.1	0.38	3041	20.15	3
033	NGC 1160	6	SBc	03 00 53.6	44 56 08	13.53	1.8	0.56	2426	19.95	3
034	NGC 1169	3	SBab	03 03 14.6	46 21 54	12.26	4.6	0.41	2386	21.29	3
035	NGC 1171	6	Sc	03 03 39.0	43 22 44	13.51	2.7	0.57	2743	20.17	3
036	NGC 1186	4	SBbc	03 05 11.3	42 49 00	12.38	3.2	0.63	2674	21.23	3
037	NGC 1343	3	SBb	03 37 17.1	72 33 22	13.57	2.6	0.36	2214	19.95	3
038	NGC 1485	3	Sb	04 04 32.1	70 59 04	13.73	2.1	0.68	1086	18.41	3
039	NGC 1530	3	SBbc	04 22 50.0	75 17 09	12.27	4.6	0.44	2462	21.23	3
040	NGC 1589	2	Sab	04 30 30.3	00 51 12	12.81	3.2	0.68	3795	21.13	3
041	NGC 2146	2	SBb	06 17 52.5	78 21 27	11.12	5.5	0.43	892	20.31	1
042	NGC 2146	5	SBc	06 23 08.2	78 32 01	13.51	3.1	0.58	1494	18.83	1
043	NGC 2336	4	SBbc	07 26 13.4	80 11 18	10.99	6.7	0.43	2200	22.04	3
044	NGC 2339	4	SBbc	07 08 03.1	18 47 23	12.47	2.7	0.27	2225	20.54	3
045	NGC 2365	1	SBa	07 22 04.4	22 05 36	13.57	2.4	0.47	2280	19.37	3
046	NGC 2481	2	Sab	07 56 55.3	23 46 50	13.24	1.6	0.63	2325	19.62	3
047	NGC 2541	6	SBcd	08 14 18.5	49 04 39	12.04	6.3	0.54	556	18.21	2
048	NGC 2543	3	SBbc	08 12 38.9	36 16 09	12.57	2.5	0.47	2473	20.42	3
049	NGC 2608	3	SBbc	08 34 58.7	28 29 30	12.99	2.2	0.38	2134	19.64	3
050	NGC 2633	3	SBb	08 47 33.8	74 07 05	12.88	2.3	0.37	2162	20.03	3

Table 2. continued

#	Object	<i>T</i>	Type	α_{1950}	δ_{1950}	B_T	D_{25}	ϵ_{25}	v_{helio}	$-M_B$	<i>S</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
051	NGC 2648	1	Sab	08 42 23.4	14 18 15	12.68	3.2	0.59	2084	19.84	1
052	NGC 2683	3	Sb	08 52 22.4	33 26 11	10.34	8.8	0.71	408	19.15	3
053	NGC 2710	3	SBb	08 59 26.4	55 43 33	13.63	2.0	0.51	2534	19.46	3
054	NGC 2712	3	SBbc	08 59 11.0	44 56 07	12.73	2.9	0.46	1819	19.64	3
055	NGC 2715	5	SBc	09 07 30.2	78 06 24	11.79	4.8	0.67	1320	20.22	1
056	NGC 2726	1	Sa	09 04 34.0	59 57 10	13.19	1.5	0.67	1514	18.92	1
057	NGC 2735	3	SBbc	09 02 21.0	25 57 17	13.92	1.2	0.64	2450	18.97	1
058	NGC 2742	5	Sc	09 07 10.6	60 29 59	12.07	3.0	0.49	1290	19.74	1
059	NGC 2748	4	Sbc	09 13 10.9	76 29 46	12.38	3.2	0.64	1474	19.81	1
060	NGC 2782	1	SBb	09 13 46.3	40 08 07	12.18	3.7	0.36	2559	20.85	1
061	NGC 2798	1	SBab	09 17 03.6	42 01 17	13.03	2.7	0.65	1739	19.23	3
062	NGC 2805	7	SBcd	09 19 56.2	64 07 29	11.56	6.3	0.28	1734	20.83	1
063	NGC 2841	3	Sb	09 21 41.1	50 59 48	9.96	7.7	0.53	638	20.53	1
064	NGC 2844	1	Sab	09 21 29.1	40 10 24	13.71	1.7	0.55	1482	18.22	2
065	NGC 2854	3	SBbc	09 23 42.6	49 13 32	13.81	1.6	0.61	2752	19.40	3
066	NGC 2856	5	Sc	09 23 56.4	49 16 11	13.96	1.1	0.56	2638	19.17	1
067	NGC 2903	4	SBbc	09 31 52.7	21 31 22	9.47	12.0	0.53	556	20.39	3
068	NGC 2916	3	Sbc	09 34 40.3	21 43 41	12.73	2.5	0.33	3728	21.01	3
069	NGC 2919	3	SBbc	09 34 31.7	10 18 23	13.34	1.6	0.67	2433	19.46	1
070	NGC 2976	5	Sc	09 46 51.2	67 56 13	10.67	6.0	0.49	3	17.69	3
071	NGC 2985	2	Sb	09 49 54.3	72 18 09	11.03	4.6	0.27	1321	20.91	1
072	NGC 3021	4	Sc	09 50 39.5	33 34 41	12.56	1.4	0.42	1542	19.40	1
073	NGC 3041	5	SBc	09 52 50.5	16 42 09	12.31	3.7	0.36	1412	19.37	1
074	NGC 3067	2	SBb	09 58 04.4	32 23 39	12.76	2.4	0.62	1476	19.11	1
075	NGC 3153	6	Sc	10 12 34.1	12 41 38	13.32	2.1	0.57	2809	19.79	1
076	NGC 3169	1	Sab	10 13 58.8	03 29 38	11.05	4.4	0.43	1234	20.26	3
077	NGC 3190	1	Sa	10 17 49.1	21 51 29	11.85	4.0	0.62	1333	19.75	1
078	NGC 3220	3	Sb	10 23 25.6	57 03 09	13.80	1.3	0.62	1183	17.82	2
079	NGC 3225	6	Sc	10 24 50.7	58 10 33	13.35	2.0	0.49	2129	19.39	1
080	NGC 3254	4	Sbc	10 29 03.1	29 31 00	12.40	4.8	0.69	1355	19.29	1
081	NGC 3259	4	SBbc	10 32 14.6	65 04 02	12.90	2.2	0.49	1682	19.43	1
082	NGC 3294	5	Sc	10 35 58.8	37 21 01	12.15	3.4	0.49	1583	19.89	1
083	NGC 3338	5	Sc	10 41 51.5	13 46 26	11.39	5.7	0.40	1302	20.11	1
084	NGC 3351	3	SBb	10 43 42.2	11 43 49	10.38	7.3	0.40	778	20.05	3
085	NGC 3353	3	Sb	10 45 04.0	55 59 07	13.21	1.4	0.27	944	18.00	2
086	NGC 3368	2	SBab	10 46 29.3	11 50 50	9.92	7.8	0.33	898	20.80	1
087	NGC 3370	5	Sc	10 46 47.6	17 18 01	12.16	2.9	0.43	1282	19.33	1
088	NGC 3389	5	Sc	10 48 12.0	12 33 36	12.36	2.8	0.55	1302	19.13	1
089	NGC 3403	4	Sbc	10 53 33.4	73 42 55	13.08	3.0	0.58	1257	18.78	1
090	NGC 3430	5	SBc	10 51 54.2	32 58 45	12.21	4.1	0.45	1585	19.81	1
091	NGC 3437	5	SBc	10 52 18.7	22 57 40	12.42	2.6	0.68	1282	19.12	1
092	NGC 3471	1	Sa	10 58 50.6	61 33 27	13.24	1.7	0.52	2126	19.51	1
093	NGC 3486	5	SBc	11 00 07.2	29 00 10	10.95	6.8	0.29	682	19.45	3
094	NGC 3530	3		11 08 22.6	57 15 22	14.59	.7	0.61	1938	17.96	3
095	NGC 3547	3	Sbc	11 09 39.7	10 45 00	13.17	2.0	0.57	1611	18.76	1
096	NGC 3583	3	SBb	11 13 54.6	48 20 50	11.77	2.5	0.38	2134	20.92	3
097	NGC 3589	7	SBcd	11 14 56.0	60 43 41	14.61	1.5	0.45	1969	17.99	3
098	NGC 3614	5	Sc	11 18 04.3	45 46 27	12.72	4.8	0.40	2333	20.14	1
099	NGC 3622	5	Sc	11 19 54.6	67 16 06	13.64	1.2	0.60	1313	18.25	2
100	NGC 3652	6	SBbc	11 22 23.2	37 47 39	12.49	2.0	0.67	2096	20.12	1

Table 2. continued

#	Object	<i>T</i>	Type	α_{1950}	δ_{1950}	B_T	D_{25}	ϵ_{25}	v_{helio}	$-M_B$	<i>S</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
101	NGC 3654	5	Sbc	11 23 53.6	69 26 23	13.57	1.5	0.43	1579	18.68	1
102	NGC 3675	3	Sb	11 25 51.4	43 36 45	10.99	6.3	0.42	767	19.78	1
103	NGC 3684	4	Sbc	11 26 55.4	17 03 28	12.06	3.5	0.33	1163	19.26	1
104	NGC 3689	5	SBc	11 27 54.4	25 41 22	13.01	1.7	0.35	2738	20.09	1
105	NGC 3701	4	Sbc	11 29 13.3	24 07 17	13.49	1.9	0.52	2807	19.66	1
106	NGC 3718	1	SBa	11 32 19.2	53 05 38	11.30	7.8	0.44	994	20.00	3
107	NGC 3726	5	SBc	11 33 04.6	47 03 18	10.80	6.0	0.32	850	20.18	1
108	NGC 3733	5	SBc	11 34 45.3	54 52 47	12.93	4.9	0.56	1185	18.69	1
109	NGC 3752	2	Sbc	11 32 14.0	74 39 27	13.89	1.7	0.57	1930	18.77	1
110	NGC 3755	5	SBc	11 36 17.5	36 26 18	13.72	3.7	0.59	1570	18.32	2
111	NGC 3756	4	SBc	11 36 32.1	54 19 25	11.99	4.2	0.49	1288	19.78	1
112	NGC 3796	5	Sc	11 40 13.9	60 19 39	13.52	1.3	0.30	1266	18.26	2
113	NGC 3804	6	SBc	11 40 38.5	56 13 50	13.82	2.2	0.35	1382	18.09	2
114	NGC 3810	5	Sc	11 40 42.9	11 29 57	11.23	4.1	0.34	993	19.74	1
115	NGC 3813	3	Sbc	11 41 02.4	36 34 29	12.25	2.0	0.49	1465	19.66	1
116	NGC 3835	3	Sab	11 43 49.3	60 08 53	13.08	1.8	0.60	2452	19.95	1
117	NGC 3846	5	Sc	11 44 13.0	55 40 51	13.86	1.0	0.28	1396	18.07	2
118	NGC 3893	5	SBbc	11 48 23.3	48 44 19	11.04	4.4	0.45	972	20.19	1
119	NGC 3898	2	Sab	11 48 59.4	56 06 41	11.52	3.7	0.33	1175	20.10	1
120	NGC 3949	4	Sc	11 53 25.8	47 53 15	11.49	2.9	0.40	799	19.40	1
121	NGC 3953	4	SBbc	11 53 33.8	52 21 19	10.65	6.9	0.49	1053	20.75	3
122	NGC 3992	4	SBbc	11 57 20.7	53 24 11	10.47	7.5	0.42	1048	20.93	3
123	NGC 4034	6	Sc	12 01 14.9	69 21 04	14.65	1.7	0.34	2384	18.38	1
124	NGC 4062	5	SBc	12 03 48.1	31 55 21	11.89	4.0	0.55	768	18.80	1
125	NGC 4081	1	Sb	12 04 18.8	64 27 58	13.73	1.5	0.60	1446	18.33	2
126	NGC 4085	5	SBc	12 05 07.6	50 22 54	12.77	2.5	0.69	750	18.05	2
127	NGC 4088	4	SBc	12 05 20.1	50 34 11	11.04	5.6	0.62	756	19.79	1
128	NGC 4100	4	Sc	12 05 53.3	49 36 34	11.85	5.4	0.69	1074	19.58	1
129	NGC 4102	4	SBb	12 06 08.2	52 44 21	12.02	5.6	0.62	840	19.00	1
130	NGC 4145	7	SBcd	12 09 46.9	39 54 32	11.78	5.8	0.33	1015	19.48	1
131	NGC 4162	4	Sc	12 11 36.5	24 09 04	12.79	2.3	0.42	2569	20.19	1
132	NGC 4169	2	E-SO	12 12 03.8	29 12 29	13.15	1.8	0.49	3815	20.66	3
133	NGC 4193	5	SBbc	12 13 38.2	13 12 07	13.04	2.2	0.52	2475	19.83	1
134	NGC 4205	5	Sbc	12 14 41.2	63 48 34	13.91	1.7	0.68	1443	18.14	2
135	NGC 4217	3	Sab	12 15 35.9	47 07 12	12.04	4.9	0.70	1022	19.29	1
136	NGC 4258	4	SBbc	12 18 43.0	47 19 55	8.93	17.4	0.62	449	21.08	3
137	NGC 4274	2	SBab	12 19 35.8	29 38 34	11.14	6.8	0.64	927	19.88	3
138	NGC 4414	5	Sc	12 26 12.5	31 15 08	10.92	3.6	0.46	720	19.67	1
139	NGC 4501	3	Sbc	12 31 44.4	14 26 56	10.13	6.8	0.46	2279	22.58	1
140	NGC 4651	5	Sc	12 43 27.6	16 25 18	11.23	4.0	0.33	805	19.43	1
141	NGC 4725	2	SBb	12 50 12.1	25 31 38	9.95	10.5	0.31	1206	21.55	3
142	NGC 4793	5	SBc	12 54 26.5	28 57 52	12.31	2.9	0.47	2496	20.64	1
143	NGC 4814	3	Sb	12 55 08.7	58 22 30	12.77	3.3	0.29	2514	20.32	1
144	NGC 4826	2	Sb	12 56 29.5	21 42 42	9.12	10.3	0.51	407	20.43	3
145	NGC 5005	4	SBbc	13 10 42.3	37 05 04	10.48	5.8	0.50	948	20.67	1
146	NGC 5014	1	Sbc	13 11 17.0	36 18 27	13.50	1.6	0.68	1131	17.96	2
147	NGC 5033	5	Sc	13 13 14.1	36 37 12	10.62	9.8	0.63	878	20.39	3
148	NGC 5055	4	Sbc	13 15 35.8	42 03 40	9.18	13.0	0.40	503	20.98	3
149	NGC 5205	5	Sbc	13 29 53.4	62 32 15	13.52	3.1	0.43	1773	18.92	1
150	NGC 5313	3	Sbc	13 49 31.8	40 00 38	12.71	1.7	0.43	2540	20.32	1

Table 2. continued

#	Object	<i>T</i>	Type	α_{1950}	δ_{1950}	B_T	D_{25}	ϵ_{25}	v_{helio}	$-M_B$	<i>S</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
151	NGC 5320	5	SBc	13 50 07.7	41 23 35	12.96	3.6	0.51	2614	20.14	1
152	NGC 5326	1	Sa	13 50 37.9	39 35 57	12.90	2.2	0.46	2506	20.11	1
153	NGC 5362	3	Sbc	13 54 40.9	41 20 19	13.18	2.2	0.57	2169	19.55	1
154	NGC 5372	3		13 54 36.2	58 41 27	13.90	.6	0.43	1711	18.46	1
155	NGC 5376	3	SBb	13 55 06.8	59 31 59	12.96	2.1	0.39	2070	19.77	1
156	NGC 5379	3	SO-a	13 55 24.9	59 46 05	14.15	2.1	0.53	1756	18.27	3
157	NGC 5448	1	SBab	14 02 39.0	49 11 50	11.99	3.8	0.48	2019	20.64	1
158	NGC 5480	5	Sc	14 06 10.1	50 45 04	12.70	1.6	0.36	1860	19.78	1
159	NGC 5520	3	Sb	14 12 11.3	50 22 21	13.28	2.0	0.45	1882	19.22	1
160	NGC 5585	7	SBcd	14 19 38.8	56 45 11	11.19	5.8	0.37	305	18.50	2
161	NGC 5602	1	Sa	14 22 07.8	50 31 30	13.54	1.5	0.48	2220	19.28	1
162	NGC 5624	5	Sbc	14 26 26.2	51 36 25	14.18	1.1	0.34	1923	18.37	3
163	NGC 5633	3	Sbc	14 27 17.5	46 10 09	13.01	2.1	0.46	2327	19.88	1
164	NGC 5676	4	Sc	14 32 36.3	49 28 46	11.82	3.9	0.54	2111	20.90	1
165	NGC 5678	3	SBb	14 31 56.3	57 56 43	11.92	3.3	0.58	1919	20.66	1
166	NGC 5708	8	Sc	14 38 04.6	40 28 47	13.86	1.6	0.64	2749	19.34	3
167	NGC 5727	8	Sc	14 40 13.6	34 00 27	14.47	2.3	0.47	1491	17.53	3
168	NGC 5879	4	Sbc	15 09 39.3	57 01 13	12.18	3.9	0.64	771	18.81	1
169	NGC 5899	5	SBc	15 14 52.5	42 04 03	12.49	3.3	0.58	2569	20.60	3
170	NGC 5930	3	SBab	15 25 57.0	41 41 41	13.60	1.7	0.54	2525	19.46	1
171	NGC 5961	3	Sbc	15 35 04.2	30 52 52	14.48	.8	0.59	1798	17.91	3
172	NGC 5962	5	Sbc	15 36 17.9	16 37 31	12.00	3.0	0.28	1956	20.56	1
173	NGC 5963	5	Sc	15 33 21.2	56 34 31	13.00	3.3	0.31	656	17.74	2
174	NGC 6012	2	SBbc	15 53 59.5	14 37 00	12.76	2.1	0.28	1854	19.72	3
175	NGC 6015	6	Sc	15 51 20.8	62 19 29	11.61	5.4	0.62	831	19.55	1
176	NGC 6140	5	SBc	16 20 54.8	65 24 11	11.83	6.3	0.27	907	19.51	3
177	NGC 6155	5	Sc	16 25 59.8	48 22 38	13.03	1.3	0.30	2427	20.00	1
178	NGC 6181	5	SBc	16 32 07.6	19 50 07	12.37	2.5	0.56	2373	20.64	1
179	NGC 6207	5	Sc	16 42 53.6	36 50 31	12.08	3.0	0.59	850	19.01	1
180	NGC 6236	6	SBc	16 44 38.4	70 47 23	13.21	2.9	0.43	1280	18.76	1
181	NGC 6255	6	SBc	16 54 36.1	36 30 38	13.62	3.6	0.58	917	17.61	3
182	NGC 6314	1	Sa	17 12 26.1	23 16 36	13.81	1.5	0.54	6633	21.37	3
183	NGC 6395	6	Sc	17 26 34.6	71 05 51	12.91	2.4	0.69	1164	18.93	1
184	NGC 6503	6	Sc	17 49 30.6	70 08 46	10.75	7.1	0.64	43	18.61	2
185	NGC 6643	5	Sc	18 19 54.8	74 34 04	11.61	3.7	0.51	1489	20.73	1
186	NGC 6667	2	SBab	18 30 40.9	67 59 06	13.78	2.4	0.54	2582	19.60	1
187	NGC 6824	3	Sb	19 43 34.5	56 05 55	12.99	2.1	0.26	3528	21.28	3
188	NGC 6962	2	SBab	20 47 03.6	00 18 10	13.02	3.0	0.23	4211	21.27	3
189	NGC 7177	3	SBb	22 00 27.3	17 42 50	11.92	3.2	0.34	1149	19.60	1
190	NGC 7290	4	Sbc	22 28 11.9	17 07 24	13.84	1.6	0.40	2900	19.51	3
191	NGC 7328	3	Sb	22 37 14.2	10 30 25	14.00	2.1	0.64	2824	19.23	1
192	NGC 7331	4	Sbc	22 36 51.3	34 23 37	10.15	10.2	0.59	821	20.93	3
193	NGC 7339	4	SBb	22 37 32.5	23 45 41	13.12	2.6	0.75	1343	18.70	3
194	NGC 7448	4	Sc	22 59 48.7	15 57 20	12.12	2.6	0.54	2191	20.58	1
195	NGC 7479	5	SBc	23 04 42.0	12 17 41	11.65	4.3	0.23	2380	21.19	3
196	NGC 7497	6	SBc	23 08 48.8	18 08 59	12.94	4.3	0.64	1709	19.25	3
197	NGC 7537	4	Sbc	23 14 19.4	04 28 16	13.80	2.1	0.74	2675	19.22	3
198	NGC 7541	4	SBbc	23 14 27.7	04 30 26	12.40	3.3	0.65	2682	20.63	3
199	NGC 7606	3	Sbc	23 18 49.2	-8 30 46	11.54	4.8	0.59	2232	21.01	3
200	NGC 7721	5	Sc	23 38 33.2	-6 32 46	12.23	3.0	0.60	2013	20.09	3

Table 2. continued

#	Object	<i>T</i>	Type	α_{1950}	δ_{1950}	B_T	D_{25}	ϵ_{25}	v_{helio}	$-M_B$	<i>S</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
201	NGC 7741	6	SBc	23 43 38.8	26 02 53	11.72	4.4	0.31	753	18.87	3
202	NGC 7757	5	Sc	23 48 29.7	04 08 44	13.16	2.3	0.28	2955	20.05	3
203	NGC 7814	2	Sb	00 02 59.6	16 07 05	11.52	5.7	0.50	1054	19.57	1
204	NGC 7817	4	Sbc	00 03 43.5	20 43 20	12.41	3.5	0.72	2308	20.36	3
205	UGC 614	7	SBcd	00 59 19.5	35 31 58	13.92	1.5	0.38	2347	19.01	3
206	UGC 622	6	Sc	01 00 10.8	47 58 06	14.16	1.0	0.32	2714	19.33	3
207	UGC 1070	6	Sc	01 29 42.4	40 56 54	14.23	1.9	0.31	2806	19.16	1
208	UGC 2855	5	SBc	03 47 52.0	70 07 05	14.63	4.3	0.54	1206	17.83	3
209	UGC 2906	3	Sb	04 00 25.9	74 04 09	14.42	2.8	0.37	2494	19.19	3
210	UGC 2955	2	Sc	04 07 57.1	69 39 34	.....	5.3	0.26	1007	.....	3
211	UGC 3580	1	SBb	06 54 57.8	69 34 16	12.96	3.5	0.48	1200	18.90	1
212	UGC 3691	6	Scd	07 07 44.5	15 11 15	13.14	2.2	0.51	2203	19.91	3
213	UGC 3828	3	SBbc	07 24 10.0	57 58 44	12.77	1.7	0.45	3252	20.93	3
214	UGC 3876	3	Sc	07 28 58.4	27 54 42	14.22	2.2	0.48	857	16.67	3
215	UGC 4159	5	Sc	08 01 25.9	61 25 39	14.07	1.0	0.44	1591	18.18	2
216	UGC 4169	6	Sc	08 02 06.3	61 24 19	13.61	1.5	0.50	1589	18.64	1
217	UGC 4238	7	SBc	08 11 00.1	76 26 11	13.65	2.4	0.42	1544	18.65	3
218	UGC 4267	8		08 12 33.6	54 59 06	14.33	.9	0.49	2617	18.85	3
219	UGC 4375	5	Sc	08 22 53.7	22 40 53	12.84	2.4	0.35	2060	19.71	1
220	UGC 4393	7	SBc	08 25 43.7	45 59 05	13.55	3.2	0.08	2126	19.16	3
221	UGC 4621	6	Sc	08 49 53.1	35 05 42	13.58	1.0	0.44	2306	19.23	1
222	UGC 5588	3		10 20 40.6	25 23 26	14.00	.5	0.34	1291	17.56	2
223	UGC 5738	5	Sc	10 34 13.1	35 17 00	14.09	.9	0.37	1516	17.86	2
224	UGC 5897	5	Sc	10 47 26.2	11 06 15	13.68	2.6	0.64	2718	19.35	1
225	UGC 6162	7	SBc	11 06 37.0	51 13 52	14.17	2.5	0.52	2200	18.59	1
226	UGC 6711	4		11 44 13.2	69 45 34	14.06	.8	0.42	2699	19.22	1
227	UGC 6930	7	SBcd	11 57 01.6	49 18 48	12.68	4.4	0.37	778	18.18	2
228	UGC 8693	5	Sc	13 44 15.5	35 13 05	14.45	1.3	0.67	2438	18.48	3
229	UGC 9123	8	Scd	14 14 47.7	36 29 27	14.35	1.1	0.28	1876	18.08	3
230	UGC 9356	5	Sbc	14 32 39.1	11 36 59	14.05	1.7	0.44	2226	18.70	1
231	UGC 11000	3		17 49 15.5	36 08 47	14.47	.8	0.42	1386	17.58	2
232	UGC 11909	5	Sc	22 06 04.5	47 13 34	13.22	2.9	0.77	1105	19.24	3
233	UGC 11973	4	SBbc	22 16 37.3	41 28 41	13.37	3.2	0.73	4219	21.23	3
234	UGC 12843	8	SBd	23 55 15.0	17 53 39	14.12	2.8	0.54	1775	18.08	3

Table 4. Photometric results

#	Object	PA	ϵ	C	F	m_T	δm_T	r_e	δr_e	$\langle\mu\rangle_e$	$\delta\langle\mu\rangle_e$	D_{iso}	δD_{iso}	Q
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
001	IC 163	92	0.54	1	<i>V</i>	13.26	0.04	24	1	21.45	0.30	114	5	1
					<i>I</i>	12.35	0.16	24	3	20.57	0.57	119	12	1
002	IC 167	169	0.41	1	<i>B</i>	13.84	0.08	34	4	23.01	0.77	118	16	3
					<i>V</i>	13.41	0.07	31	3	22.42	0.33	76	16	3
					<i>I</i>	12.74	0.30	26	11	21.38	0.88	88	22	2
003	IC 277	32	0.14	1	<i>B</i>	13.89	0.06	20	1	21.53	0.34	71	4	1
					<i>V</i>	13.08	0.06	21	1	20.90	0.39	66	6	2
					<i>I</i>	12.11	0.11	20	2	19.86	0.49	73	7	2
004	IC 284	18	0.58	1	<i>B</i>	12.52	0.06	63	2	22.59	0.30	248	6	1
					<i>R</i>	11.55	0.08	61	3	21.47	0.43	214	19	4
					<i>I</i>	11.11	0.16	59	6	20.94	0.45	242	20	4
005	IC 356	103	0.27	3	<i>V</i>	10.24	0.01	108	1	22.18	0.07	.....	.....	1
					<i>I</i>	8.69	0.10	77	9	19.73	0.30	.....	.....	1
006	IC 467	75	0.58	1	<i>I</i>	11.63	0.12	43	4	20.60	0.40	170	12	1
007	IC 529	145	0.56	1	<i>V</i>	12.30	0.03	46	1	21.84	0.17	187	7	2
					<i>I</i>	11.27	0.03	43	2	20.72	0.19	202	4	1
008	IC 851	154	0.52	1	<i>I</i>	13.01	0.03	17	1	20.34	0.37	76	2	1
009	IC 1014	59	0.37	1	<i>I</i>	11.98	0.09	34	4	21.25	0.36	137	9	1
010	IC 1151	29	0.59	1	<i>B</i>	13.51	0.06	26	1	21.86	0.39	137	4	1
					<i>V</i>	12.95	0.06	27	2	21.35	0.33	130	7	1
					<i>I</i>	12.14	0.14	26	4	20.46	0.52	134	9	3
011	IC 1251	60	0.40	1	<i>I</i>	13.28	0.10	20	2	21.01	0.47	74	5	2
012	IC 2166	120	0.50	2	<i>V</i>	12.45	0.02	40	1	21.84	0.16	153	2	4
					<i>I</i>	11.17	0.07	44	4	20.67	0.27	.....	.....	1
013	NGC 23	177	0.35	1	<i>B</i>	12.73	0.04	26	2	20.71	0.41	117	11	1
					<i>V</i>	11.93	0.02	24	1	19.79	0.24	108	11	1
					<i>R</i>	11.46	0.02	25	1	19.33	0.18	108	5	3
					<i>I</i>	10.81	0.13	23	5	18.53	0.52	154	42	2
014	NGC 63	104	0.39	1	<i>B</i>	13.02	0.02	17	1	20.62	0.17	99	5	5
					<i>V</i>	12.53	0.02	18	1	20.16	0.32	89	8	5
					<i>I</i>	11.43	0.09	18	2	19.15	0.48	102	12	5
015	NGC 485	4	0.67	1	<i>B</i>	14.81	0.06	22	1	22.16	0.36	86	7	5
					<i>V</i>	13.25	0.10	23	2	20.73	0.45	102	14	5
					<i>I</i>	12.54	0.16	24	3	20.10	0.57	116	23	5
016	NGC 532	30	0.69	1	<i>B</i>	14.66	0.32	42	13	23.20	2.28	.....	.....	5
					<i>V</i>	11.89	0.14	53	5	21.01	0.41	205	46	5
					<i>I</i>	11.09	0.09	49	3	19.98	0.31	210	30	5
017	NGC 658	24	0.35	1	<i>V</i>	12.31	0.04	31	2	21.31	0.26	121	12	1
					<i>I</i>	11.67	0.14	21	4	19.57	0.56	116	26	1
018	NGC 660	17	0.60	2	<i>B</i>	12.04	0.04	103	4	23.08	0.30	337	30	3
					<i>V</i>	11.14	0.02	93	3	21.91	0.10	287	40	3
					<i>I</i>	9.73	0.04	73	4	20.04	0.16	.....	.....	4
019	NGC 672	71	0.54	1	<i>V</i>	11.07	0.02	95	1	21.70	0.10	314	13	2
					<i>I</i>	10.19	0.20	89	12	20.79	0.53	324	59	1
020	NGC 691	95	0.30	1	<i>V</i>	11.46	0.02	71	2	22.28	0.12	187	57	1
					<i>I</i>	10.71	0.05	39	2	20.35	0.24	200	7	1
021	NGC 772	125	0.36	2	<i>V</i>	10.18	0.03	95	2	21.66	0.11	316	15	1
					<i>I</i>	9.14	0.05	82	4	20.27	0.17	.....	.....	2
022	NGC 803	10	0.63	2	<i>V</i>	12.48	0.01	41	1	21.55	0.14	153	8	1
023	NGC 918	159	0.45	1	<i>V</i>	11.64	0.11	52	3	21.64	0.36	212	17	2

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	m_T	δm_T	r_e	δr_e	$\langle \mu \rangle_e$	$\delta \langle \mu \rangle_e$	D_{iso}	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
023	NGC 918				<i>I</i>	10.98	0.04	53	1	21.03	0.20	215	6	2
024	NGC 925	113	0.55	3	<i>I</i>	9.77	0.07	113	8	21.16	0.20	.....	.....	1
025	NGC 949	147	0.48	1	<i>B</i>	12.27	0.04	32	2	21.05	0.42	179	8	3
					<i>V</i>	11.90	0.01	27	1	20.34	0.22	159	6	4
					<i>R</i>	11.33	0.02	27	1	19.80	0.20	165	6	3
					<i>I</i>	10.78	0.09	28	4	19.37	0.38	195	19	3
026	NGC 959	66	0.39	1	<i>I</i>	11.58	0.11	29	3	20.49	0.43	137	12	1
027	NGC 1003	95	0.70	1	<i>I</i>	11.74	0.10	52	5	21.04	0.32	212	24	1
028	NGC 1024	158	0.63	1	<i>B</i>	13.38	0.16	31	7	21.93	1.57	126	38	1
					<i>V</i>	12.33	0.04	22	2	20.39	0.32	119	22	1
					<i>R</i>	11.48	0.04	30	2	20.01	0.40	219	17	1
					<i>I</i>	10.90	0.18	21	7	18.87	0.65	213	35	2
029	NGC 1032	68	0.71	2	<i>B</i>	12.68	0.01	29	1	21.23	0.11	226	12	1
					<i>V</i>	11.70	0.01	28	1	20.18	0.20	211	17	1
					<i>R</i>	11.15	.....	27	1	19.53	0.09	225	6	3
030	NGC 1055	108	0.50	2	<i>B</i>	11.40	0.03	97	2	22.63	0.18	393	17	2
					<i>V</i>	10.60	0.05	93	1	21.64	0.18	353	48	2
					<i>I</i>	9.56	0.22	78	16	19.72	0.57	393	69	2
031	NGC 1056	158	0.32	1	<i>V</i>	12.35	0.05	21	2	20.33	0.34	105	9	1
					<i>I</i>	10.56	0.05	21	1	18.65	0.35	167	22	2
032	NGC 1137	18	0.25	1	<i>B</i>	13.59	0.06	19	2	21.70	0.60	112	6	3
					<i>V</i>	12.84	0.06	18	2	20.89	0.41	94	18	3
					<i>I</i>	11.88	0.07	15	2	19.47	0.49	103	10	2
033	NGC 1160	51	0.56	3	<i>I</i>	11.80	0.02	24	1	19.82	0.26	.....	.....	1
034	NGC 1169	31	0.32	1	<i>B</i>	12.31	0.06	63	5	22.80	0.49	234	12	2
					<i>V</i>	11.41	0.05	48	4	21.50	0.22	214	9	2
					<i>R</i>	10.69	0.05	49	4	20.77	0.50	234	10	3
					<i>I</i>	10.04	0.09	43	5	19.90	0.32	242	9	3
035	NGC 1171	146	0.45	1	<i>I</i>	11.52	0.06	22	2	19.43	0.36	129	14	1
036	NGC 1186	122	0.59	1	<i>I</i>	10.74	0.01	39	1	19.75	0.15	208	2	4
037	NGC 1343	80	0.50	3	<i>V</i>	12.37	0.02	36	3	21.74	0.19	.....	.....	3
					<i>I</i>	10.79	0.04	25	3	19.39	0.29	.....	.....	1
038	NGC 1485	24	0.67	1	<i>V</i>	12.37	0.03	37	1	20.99	0.20	160	9	5
					<i>I</i>	10.83	0.02	37	1	19.48	0.17	223	5	1
039	NGC 1530	168	0.43	1	<i>I</i>	10.05	0.20	79	23	20.92	0.53	255	63	1
040	NGC 1589	158	0.62	2	<i>B</i>	12.85	0.05	41	2	21.82	0.40	174	14	1
					<i>V</i>	11.89	0.06	31	4	20.31	0.31	165	23	2
					<i>R</i>	11.09	0.02	40	1	19.94	0.11	189	5	4
					<i>I</i>	10.48	0.07	45	5	19.65	0.28	.....	.....	4
041	NGC 2146	124	0.62	1	<i>B</i>	11.41	0.02	96	1	22.28	0.11	368	6	2
					<i>V</i>	10.71	0.06	81	5	21.18	0.21	353	31	2
					<i>I</i>	9.64	0.14	72	14	19.88	0.39	402	58	3
042	NGC 2146A	33	0.56	1	<i>I</i>	11.92	0.19	44	11	21.48	0.54	162	19	2
043	NGC 2336	1	0.45	2	<i>V</i>	10.89	0.01	77	1	21.72	0.09	328	27	2
044	NGC 2339	174	0.32	2	<i>V</i>	11.76	0.02	31	1	21.04	0.21	155	12	3
					<i>I</i>	10.67	0.10	25	2	19.56	0.42	.....	.....	4
045	NGC 2365	173	0.45	1	<i>V</i>	12.19	0.05	32	2	20.90	0.28	164	11	5
					<i>I</i>	10.92	0.25	31	9	19.59	0.75	183	36	1
046	NGC 2481	21	0.37	1	<i>V</i>	12.50	0.02	10	1	18.67	0.55	83	4	3
					<i>I</i>	11.32	0.02	10	1	17.54	0.52	91	3	2

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	m_T	δm_T	r_e	δr_e	$\langle \mu \rangle_e$	$\delta \langle \mu \rangle_e$	D_{iso}	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
047	NGC 2541	170	0.49	1	<i>V</i>	11.88	0.02	81	1	22.51	0.10	234	14	1
					<i>I</i>	10.94	0.03	82	2	21.62	0.14	268	2	2
048	NGC 2543	49	0.51	1	<i>B</i>	12.92	0.04	35	1	22.15	0.19	151	4	3
					<i>V</i>	12.39	0.02	32	1	21.30	0.21	136	14	3
					<i>I</i>	11.19	0.07	34	1	20.28	0.31	149	11	2
049	NGC 2608	59	0.35	1	<i>I</i>	11.39	0.08	35	2	20.26	0.34	135	18	2
050	NGC 2633	173	0.31	1	<i>B</i>	12.73	0.03	30	1	21.23	0.29	143	4	3
					<i>V</i>	11.95	0.04	27	2	20.26	0.27	138	9	2
					<i>I</i>	11.05	0.07	24	2	19.00	0.37	139	10	3
051	NGC 2648	140	0.63	1	<i>V</i>	11.85	0.02	19	1	19.50	0.30	199	7	2
					<i>I</i>	10.63	0.01	19	1	18.30	0.28	227	1	1
052	NGC 2683	44	0.73	2	<i>V</i>	9.72	0.01	76	1	19.60	0.07	506	18	1
					<i>I</i>	8.46	0.01	72	1	18.32	0.09	.....	.....	1
053	NGC 2710	123	0.59	1	<i>B</i>	13.22	0.03	22	1	21.61	0.21	134	6	5
					<i>V</i>	13.08	0.03	22	1	21.48	0.29	119	15	5
					<i>I</i>	12.19	0.08	22	2	20.57	0.42	134	12	4
054	NGC 2712	1	0.50	1	<i>V</i>	12.26	0.03	30	1	21.01	0.23	130	7	2
					<i>I</i>	11.04	0.04	30	1	19.78	0.27	169	11	1
055	NGC 2715	20	0.64	1	<i>V</i>	11.56	0.05	50	3	21.39	0.21	255	14	2
					<i>I</i>	10.51	0.11	45	5	20.17	0.37	274	19	2
056	NGC 2726	89	0.58	1	<i>B</i>	13.76	0.03	18	1	21.03	0.21	97	3	3
					<i>V</i>	13.00	0.02	18	1	20.24	0.33	93	5	2
					<i>I</i>	11.89	0.02	18	1	19.12	0.33	104	3	3
057	NGC 2735	95	0.67	3	<i>V</i>	14.20	0.04	10	1	20.40	0.59	.....	.....	5
					<i>I</i>	11.98	0.03	11	1	18.25	0.54	.....	.....	1
058	NGC 2742	89	0.47	1	<i>I</i>	10.52	0.06	43	1	19.91	0.26	193	10	1
059	NGC 2748	42	0.49	1	<i>B</i>	12.48	0.04	39	1	21.07	0.21	160	8	3
					<i>V</i>	11.69	0.02	39	1	20.23	0.17	152	9	2
					<i>I</i>	10.74	0.02	34	1	18.98	0.20	162	3	3
060	NGC 2782	111	0.18	1	<i>V</i>	11.80	.....	24	1	20.42	0.22	131	6	2
					<i>I</i>	10.93	0.14	22	5	19.42	0.54	143	30	5
061	NGC 2798	161	0.64	1	<i>V</i>	12.45	0.03	13	1	19.73	0.45	143	15	5
					<i>I</i>	11.33	0.12	12	1	18.39	0.69	155	20	1
062	NGC 2805	179	0.19	1	<i>V</i>	11.92	0.04	64	2	22.89	0.16	186	26	1
					<i>I</i>	10.79	0.03	81	4	22.17	0.14	234	4	2
063	NGC 2841	150	0.57	0	<i>V</i>	9.41	0.05	73	5	19.91	0.17	.....	.....	2
					<i>I</i>	8.17	0.01	78	1	18.84	0.09	.....	.....	1
064	NGC 2844	14	0.45	1	<i>V</i>	12.89	0.03	17	1	20.33	0.35	97	8	3
					<i>I</i>	11.54	0.02	20	1	19.37	0.29	121	4	2
065	NGC 2854	59	0.49	1	<i>I</i>	12.05	0.06	17	1	19.21	0.43	88	10	1
066	NGC 2856	131	0.49	1	<i>V</i>	13.26	.....	15	1	20.29	0.35	74	2	4
					<i>I</i>	12.13	0.02	15	1	19.11	0.38	82	1	2
067	NGC 2903	24	0.53	2	<i>V</i>	8.88	0.02	108	1	20.25	0.09	591	27	1
					<i>I</i>	7.72	0.01	107	1	19.11	0.07	.....	.....	2
068	NGC 2916	19	0.35	2	<i>V</i>	12.10	0.01	32	1	20.92	0.18	128	5	1
069	NGC 2919	157	0.65	2	<i>V</i>	13.60	0.01	27	1	21.53	0.20	98	11	5
					<i>I</i>	12.07	0.08	28	1	20.04	0.37	.....	.....	1
070	NGC 2976	141	0.43	1	<i>B</i>	10.99	0.02	81	1	21.49	0.10	334	7	1
					<i>V</i>	10.24	0.02	82	1	20.76	0.10	327	19	1
					<i>I</i>	9.21	0.08	84	4	19.79	0.25	365	35	3

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	m_T	δm_T	r_e	δr_e	$\langle \mu \rangle_e$	$\delta \langle \mu \rangle_e$	D_{iso}	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
071	NGC 2985	2	0.20	2	<i>V</i>	10.50	0.04	38	2	20.20	0.22	228	17	1
					<i>I</i>	9.02	0.05	59	5	19.79	0.20	.....	.....	1
072	NGC 3021	107	0.40	2	<i>V</i>	12.42	0.01	20	1	20.03	0.27	91	6	5
					<i>I</i>	11.18	0.01	20	1	18.77	0.29	.....	.....	1
073	NGC 3041	88	0.35	1	<i>V</i>	11.54	0.02	50	2	21.56	0.16	202	8	3
					<i>I</i>	10.57	0.19	52	12	20.65	0.54	221	32	1
074	NGC 3067	104	0.55	1	<i>V</i>	12.20	0.03	26	1	20.42	0.25	134	3	2
					<i>I</i>	11.05	0.02	25	1	19.23	0.24	146	3	1
075	NGC 3153	166	0.55	1	<i>V</i>	12.84	0.03	27	1	21.23	0.27	123	4	1
					<i>I</i>	12.18	0.11	26	2	20.45	0.43	125	7	1
076	NGC 3169	59	0.21	1	<i>B</i>	11.04	0.02	76	2	21.95	0.20	330	8	1
					<i>V</i>	10.35	0.02	58	2	20.74	0.13	284	38	1
					<i>I</i>	9.30	0.11	41	8	19.02	0.38	322	35	3
077	NGC 3190	119	0.71	3	<i>B</i>	11.99	0.02	34	1	20.61	0.17	.....	.....	2
					<i>V</i>	11.03	0.05	32	2	19.48	0.28	.....	.....	1
					<i>I</i>	9.65	0.08	33	3	18.21	0.34	.....	.....	3
078	NGC 3220	95	0.54	1	<i>V</i>	13.95	0.01	24	1	21.42	0.21	75	1	1
					<i>I</i>	12.96	0.05	22	1	20.44	0.34	83	1	3
079	NGC 3225	153	0.47	1	<i>V</i>	13.66	0.04	25	1	21.88	0.30	90	6	1
					<i>I</i>	12.48	0.05	24	1	20.68	0.32	106	5	3
080	NGC 3254	47	0.72	1	<i>V</i>	11.86	0.01	54	1	21.25	0.12	257	19	2
					<i>I</i>	10.78	0.10	43	6	19.79	0.34	270	18	2
081	NGC 3259	17	0.43	2	<i>V</i>	12.72	0.01	22	1	20.97	0.25	92	4	1
					<i>I</i>	11.87	0.03	17	1	19.45	0.36	.....	.....	1
082	NGC 3294	117	0.52	1	<i>V</i>	11.67	0.01	44	1	21.13	0.14	190	7	2
					<i>I</i>	10.20	0.03	45	1	19.69	0.17	235	8	1
083	NGC 3338	100	0.56	1	<i>V</i>	10.92	0.02	77	1	21.64	0.11	.....	.....	2
					<i>I</i>	10.12	0.07	61	5	20.23	0.25	307	28	1
084	NGC 3351	179	0.18	3	<i>I</i>	8.50	0.09	71	4	19.58	0.27	.....	.....	1
085	NGC 3353	81	0.25	1	<i>V</i>	12.81	0.02	11	1	19.60	0.49	74	3	2
					<i>I</i>	12.02	0.02	14	1	19.25	0.41	86	3	1
086	NGC 3368	140	0.38	3	<i>V</i>	9.12	0.01	80	1	20.15	0.08	.....	.....	2
					<i>I</i>	8.18	0.03	61	2	18.60	0.14	.....	.....	2
087	NGC 3370	141	0.43	1	<i>V</i>	12.16	0.04	26	1	20.78	0.29	143	8	4
					<i>I</i>	11.14	0.04	25	1	19.58	0.29	158	6	1
088	NGC 3389	113	0.54	1	<i>I</i>	11.20	0.12	41	5	20.23	0.40	176	25	1
089	NGC 3403	75	0.64	1	<i>I</i>	11.48	0.14	37	6	20.21	0.46	189	44	1
090	NGC 3430	28	0.46	1	<i>V</i>	11.94	0.02	41	1	21.20	0.17	172	11	4
					<i>I</i>	10.70	0.02	39	1	19.88	0.17	196	5	1
091	NGC 3437	119	0.63	1	<i>V</i>	12.19	0.02	27	1	20.15	0.23	136	11	5
					<i>I</i>	10.82	0.03	25	1	18.59	0.26	157	7	3
092	NGC 3471	14	0.44	2	<i>V</i>	13.19	0.06	17	1	20.79	0.44	88	8	1
					<i>I</i>	11.63	0.08	18	1	19.46	0.46	.....	.....	3
093	NGC 3486	111	0.09	1	<i>I</i>	9.69	0.29	53	21	20.15	0.75	267	87	1
094	NGC 3530	97	0.48	1	<i>I</i>	12.32	0.02	8	1	18.11	0.65	67	3	1
095	NGC 3547	7	0.49	1	<i>V</i>	12.95	0.02	21	1	20.55	0.29	93	8	5
					<i>I</i>	12.17	0.04	21	1	19.78	0.34	98	6	3
096	NGC 3583	123	0.38	3	<i>I</i>	10.42	0.07	25	1	18.95	0.36	.....	.....	1
097	NGC 3589	57	0.48	1	<i>I</i>	12.97	0.17	32	3	21.54	0.54	104	19	1
098	NGC 3614	102	0.40	1	<i>V</i>	12.15	0.04	45	3	22.01	0.21	169	10	1

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	m_T	δm_T	r_e	δr_e	$\langle \mu \rangle_e$	$\delta \langle \mu \rangle_e$	D_{iso}	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
098	NGC 3614				<i>I</i>	11.00	0.09	56	4	21.21	0.29	207	19	1
099	NGC 3622	6	0.32	1	<i>I</i>	12.24	0.04	18	1	19.96	0.36	95	4	1
100	NGC 3652	148	0.62	1	<i>V</i>	12.66	0.02	21	1	20.95	0.28	136	5	3
					<i>I</i>	11.81	0.03	20	1	20.05	0.32	143	6	1
101	NGC 3654	29	0.42	1	<i>I</i>	12.25	0.04	19	1	19.88	0.34	89	4	1
102	NGC 3675	2	0.46	2	<i>V</i>	10.09	0.04	73	3	20.44	0.15	341	84	4
					<i>I</i>	8.65	0.06	88	6	19.50	0.20	.....	.....	3
103	NGC 3684	136	0.28	1	<i>V</i>	11.93	0.04	31	1	20.88	0.25	138	9	2
					<i>I</i>	10.98	0.02	30	1	19.84	0.21	153	3	1
104	NGC 3689	94	0.39	1	<i>I</i>	11.32	0.02	20	1	19.23	0.29	116	3	1
105	NGC 3701	143	0.48	1	<i>V</i>	13.05	0.03	23	1	21.22	0.27	100	5	2
					<i>I</i>	12.25	0.02	22	1	20.30	0.27	108	2	2
106	NGC 3718	173	0.52	1	<i>B</i>	11.81	0.06	64	3	22.53	0.36	302	28	2
					<i>V</i>	10.84	0.04	61	2	21.45	0.16	284	43	1
					<i>I</i>	9.52	0.04	61	3	20.15	0.17	368	26	1
107	NGC 3726	17	0.36	1	<i>V</i>	10.62	0.02	84	1	21.64	0.11	321	5	3
					<i>I</i>	9.42	0.02	83	1	20.37	0.10	355	4	2
108	NGC 3733	172	0.59	3	<i>I</i>	11.70	0.04	58	2	21.53	0.18	.....	.....	3
109	NGC 3752	152	0.56	1	<i>V</i>	13.81	0.03	22	1	21.69	0.30	90	4	3
					<i>I</i>	12.56	0.04	23	1	20.53	0.31	106	4	2
110	NGC 3755	124	0.58	1	<i>V</i>	12.79	0.05	39	3	21.99	0.23	162	6	3
					<i>I</i>	11.94	0.05	37	2	21.01	0.25	169	6	1
111	NGC 3756	179	0.46	1	<i>V</i>	11.51	0.03	53	1	21.34	0.17	210	30	3
					<i>I</i>	10.61	0.06	51	2	20.35	0.24	220	10	3
112	NGC 3796	125	0.38	1	<i>V</i>	12.86	0.03	11	1	19.63	0.51	81	4	3
					<i>I</i>	11.85	0.02	12	1	18.78	0.45	99	2	1
113	NGC 3804	117	0.46	1	<i>V</i>	13.01	0.05	34	2	22.00	0.27	125	6	3
					<i>I</i>	12.24	0.07	35	3	21.29	0.31	133	5	1
114	NGC 3810	25	0.31	1	<i>V</i>	10.77	0.02	42	1	20.52	0.16	222	5	1
					<i>I</i>	9.72	0.04	38	2	19.29	0.22	239	9	1
115	NGC 3813	84	0.27	1	<i>V</i>	11.73	0.02	33	1	20.27	0.19	122	3	1
					<i>I</i>	10.48	0.02	40	1	19.45	0.18	142	10	1
116	NGC 3835	59	0.67	1	<i>V</i>	13.07	0.02	22	1	20.58	0.27	113	3	3
					<i>I</i>	11.64	0.03	22	1	19.13	0.30	131	6	2
117	NGC 3846	133	0.31	1	<i>I</i>	13.02	0.07	13	1	20.16	0.54	62	2	1
118	NGC 3893	177	0.36	1	<i>V</i>	10.63	0.02	43	1	20.36	0.16	229	8	2
					<i>I</i>	9.65	0.03	46	2	19.50	0.18	264	15	2
119	NGC 3898	108	0.36	1	<i>V</i>	10.75	0.03	33	1	19.84	0.21	231	43	1
					<i>I</i>	9.51	0.03	36	2	18.76	0.22	279	21	3
120	NGC 3949	131	0.12	1	<i>V</i>	10.87	0.02	36	1	20.02	0.19	155	5	2
					<i>I</i>	10.02	0.05	38	2	19.33	0.24	171	13	2
121	NGC 3953	174	0.48	4	<i>B</i>	10.93	0.03	66	2	21.71	0.24	.....	.....	5
122	NGC 3992	70	0.44	3	<i>I</i>	8.89	0.01	89	1	20.05	0.08	.....	.....	1
123	NGC 4034	12	0.38	1	<i>I</i>	12.89	0.13	27	3	21.53	0.49	91	6	1
124	NGC 4062	100	0.59	1	<i>V</i>	11.20	0.01	60	1	20.99	0.11	249	6	1
					<i>I</i>	10.01	0.03	60	1	19.80	0.15	285	11	1
125	NGC 4081	135	0.55	1	<i>V</i>	13.06	0.02	23	1	20.51	0.26	98	2	1
					<i>I</i>	11.99	0.02	22	1	19.29	0.28	108	3	1
126	NGC 4085	77	0.77	3	<i>V</i>	12.43	0.05	34	2	20.60	0.25	.....	.....	2
					<i>I</i>	11.59	0.03	33	1	19.69	0.22	.....	.....	3

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	<i>m_T</i>	δm_T	<i>r_e</i>	δr_e	$\langle \mu \rangle_e$	$\delta \langle \mu \rangle_e$	<i>D_{iso}</i>	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
127	NGC 4088	53	0.59	1	<i>V</i>	10.57	0.01	76	1	20.81	0.09	311	6	3
					<i>I</i>	9.49	0.03	74	1	19.63	0.14	329	11	1
128	NGC 4100	167	0.66	1	<i>V</i>	11.18	0.02	68	1	20.85	0.12	278	13	1
					<i>I</i>	9.99	0.03	66	1	19.58	0.13	311	10	1
129	NGC 4102	40	0.41	1	<i>V</i>	11.13	0.01	30	1	19.99	0.20	174	4	1
					<i>I</i>	9.88	0.01	27	1	18.56	0.21	197	2	1
130	NGC 4145	97	0.39	1	<i>V</i>	11.15	0.05	96	6	22.34	0.18	300	10	1
					<i>I</i>	10.20	0.10	90	11	21.30	0.29	326	18	1
131	NGC 4162	170	0.34	1	<i>V</i>	11.61	0.02	23	1	20.02	0.26	133	6	1
					<i>I</i>	11.24	0.05	22	1	19.54	0.33	131	5	1
132	NGC 4169	172	0.35	1	<i>I</i>	11.16	0.03	22	1	19.41	0.30	136	5	1
133	NGC 4193	92	0.52	1	<i>B</i>	13.29	0.06	28	1	21.81	0.29	144	5	2
					<i>V</i>	12.34	0.04	29	1	20.95	0.25	137	7	2
					<i>I</i>	11.25	0.10	27	2	19.63	0.41	151	15	3
134	NGC 4205	21	0.51	1	<i>I</i>	12.21	0.06	28	1	20.12	0.32	114	6	1
135	NGC 4217	50	0.62	1	<i>V</i>	11.29	0.06	85	4	21.48	0.20	314	9	1
					<i>I</i>	9.92	0.04	84	3	20.09	0.14	369	12	2
136	NGC 4258	159	0.55	3	<i>V</i>	8.31	0.01	174	2	20.62	0.05	.....	.....	2
					<i>I</i>	7.38	0.01	141	1	19.37	0.05	.....	.....	2
137	NGC 4274	102	0.61	3	<i>B</i>	11.33	0.02	57	2	21.62	0.26	.....	.....	1
					<i>V</i>	10.36	0.02	54	1	20.56	0.13	.....	.....	1
					<i>I</i>	8.96	0.03	77	5	19.59	0.14	.....	.....	3
138	NGC 4414	161	0.30	1	<i>B</i>	10.94	0.03	45	1	20.60	0.21	272	11	3
					<i>V</i>	10.29	0.02	43	1	19.80	0.17	235	9	3
					<i>I</i>	9.22	0.07	42	3	18.73	0.28	280	32	3
139	NGC 4501	141	0.53	1	<i>V</i>	9.55	0.01	77	1	20.21	0.09	407	16	1
					<i>I</i>	8.42	0.01	72	1	18.93	0.09	469	5	1
140	NGC 4651	72	0.29	1	<i>V</i>	10.78	0.03	35	1	20.05	0.20	225	7	1
					<i>I</i>	9.79	0.02	33	1	18.93	0.20	228	5	3
141	NGC 4725	45	0.51	0	<i>V</i>	9.39	0.02	134	2	20.92	0.09	.....	.....	1
					<i>I</i>	8.15	0.02	140	1	19.82	0.08	.....	.....	1
142	NGC 4793	49	0.53	1	<i>I</i>	11.52	0.02	23	1	19.63	0.26	138	3	3
143	NGC 4814	107	0.35	1	<i>V</i>	12.03	0.04	25	1	20.60	0.30	131	13	2
					<i>I</i>	10.73	0.05	32	3	19.81	0.28	160	8	1
144	NGC 4826	114	0.47	3	<i>V</i>	8.58	0.01	86	1	19.68	0.08	.....	.....	1
					<i>I</i>	7.35	0.02	85	2	18.46	0.11	.....	.....	1
145	NGC 5005	67	0.49	1	<i>V</i>	9.81	0.01	55	1	19.55	0.12	314	7	3
					<i>I</i>	8.62	0.03	54	3	18.33	0.15	365	25	3
146	NGC 5014	103	0.63	1	<i>I</i>	11.99	0.02	17	1	18.72	0.34	102	3	1
147	NGC 5033	173	0.50	4	<i>V</i>	10.17	.....	87	1	21.10	0.07	.....	.....	3
					<i>I</i>	8.78	0.01	81	1	19.58	0.09	.....	.....	1
148	NGC 5055	105	0.46	3	<i>V</i>	8.65	0.01	142	1	20.73	0.05	.....	.....	2
					<i>I</i>	7.62	0.01	99	1	18.98	0.07	.....	.....	1
149	NGC 5205	168	0.32	1	<i>V</i>	12.77	0.05	23	1	21.18	0.32	99	4	2
					<i>I</i>	11.70	0.02	22	1	20.05	0.27	117	3	1
150	NGC 5313	47	0.43	1	<i>V</i>	12.09	0.01	25	1	20.22	0.23	109	4	3
					<i>I</i>	10.93	0.02	25	1	19.00	0.25	129	4	1
151	NGC 5320	17	0.52	1	<i>V</i>	12.40	0.02	33	1	21.30	0.20	144	11	1
					<i>I</i>	11.33	0.06	33	2	20.24	0.29	176	10	2
152	NGC 5326	134	0.37	1	<i>V</i>	11.77	0.04	25	1	20.05	0.30	145	7	1

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	m_T	δm_T	r_e	δr_e	$\langle \mu \rangle_e$	$\delta \langle \mu \rangle_e$	D_{iso}	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
152	NGC 5326				<i>I</i>	10.39	0.06	37	5	19.50	0.27	191	18	2
153	NGC 5362	85	0.60	1	<i>V</i>	12.76	0.03	27	1	21.04	0.25	126	3	3
					<i>I</i>	12.47	0.07	26	1	20.63	0.35	121	5	1
154	NGC 5372	134	0.39	1	<i>I</i>	12.51	0.03	9	1	18.70	0.63	58	3	1
155	NGC 5376	64	0.37	1	<i>V</i>	12.33	0.01	23	1	20.60	0.25	111	3	2
					<i>I</i>	11.17	0.02	23	1	19.50	0.25	130	3	1
156	NGC 5379	62	0.65	1	<i>V</i>	13.42	0.03	23	1	21.13	0.28	106	6	2
					<i>I</i>	12.24	0.04	24	1	20.02	0.30	129	4	1
157	NGC 5448	111	0.57	1	<i>B</i>	12.62	0.06	50	3	21.95	0.39	232	10	3
					<i>V</i>	11.88	0.07	45	2	20.96	0.26	211	14	2
					<i>I</i>	10.75	0.17	43	7	19.75	0.50	231	22	3
158	NGC 5480	45	0.11	1	<i>B</i>	12.93	0.03	25	1	21.39	0.13	110	5	2
					<i>V</i>	12.18	0.02	26	1	20.74	0.25	105	5	3
					<i>I</i>	10.58	0.08	48	5	20.74	0.29	134	22	3
159	NGC 5520	65	0.44	1	<i>B</i>	13.31	0.03	17	1	20.82	0.27	109	5	3
					<i>V</i>	12.75	0.02	15	1	20.08	0.37	100	4	3
					<i>I</i>	11.73	0.16	18	5	19.44	0.65	121	25	1
160	NGC 5585	36	0.35	1	<i>V</i>	11.19	0.09	80	6	22.17	0.27	275	15	1
					<i>I</i>	10.42	0.11	76	7	21.28	0.31	288	14	1
161	NGC 5602	167	0.44	1	<i>B</i>	13.21	0.02	13	1	20.42	0.14	104	3	5
					<i>V</i>	12.53	0.02	14	1	19.86	0.41	102	4	5
					<i>I</i>	11.38	0.04	18	1	19.27	0.37	112	5	1
162	NGC 5624	14	0.28	1	<i>V</i>	13.69	0.03	18	1	21.36	0.35	65	3	1
					<i>I</i>	13.13	0.13	17	2	20.68	0.58	66	6	3
163	NGC 5633	16	0.23	1	<i>V</i>	12.40	0.03	17	1	20.08	0.35	81	5	2
					<i>I</i>	11.43	0.04	17	1	19.11	0.40	97	9	5
164	NGC 5676	47	0.47	1	<i>B</i>	11.99	0.03	41	1	21.34	0.19	220	6	2
					<i>V</i>	11.24	0.01	40	1	20.46	0.15	211	8	2
					<i>I</i>	10.02	0.07	39	3	19.23	0.29	225	19	1
165	NGC 5678	1	0.50	2	<i>V</i>	11.43	0.02	33	1	20.47	0.19	187	5	2
					<i>I</i>	10.31	0.02	32	1	19.33	0.20	.....	.....	1
166	NGC 5708	176	0.60	1	<i>I</i>	12.33	0.05	25	1	20.25	0.32	109	4	1
167	NGC 5727	121	0.48	1	<i>V</i>	13.65	0.03	29	1	22.33	0.24	98	4	1
					<i>I</i>	13.03	0.19	28	5	21.66	0.61	98	11	3
168	NGC 5879	4	0.63	2	<i>V</i>	11.47	0.12	41	9	20.49	0.40	235	20	4
					<i>I</i>	10.41	0.10	35	6	19.17	0.38	.....	.....	1
169	NGC 5899	17	0.53	1	<i>B</i>	12.70	0.06	36	3	21.65	0.53	187	9	3
					<i>V</i>	11.84	0.06	35	3	20.71	0.27	184	4	3
					<i>I</i>	10.71	0.11	35	6	19.54	0.41	197	16	3
170	NGC 5930	160	0.55	2	<i>B</i>	13.44	0.04	17	1	21.17	0.43	125	4	2
					<i>V</i>	12.53	0.02	17	1	20.34	0.34	120	3	1
					<i>I</i>	10.45	0.07	18	2	18.39	0.44	.....	.....	3
171	NGC 5961	99	0.44	1	<i>V</i>	13.57	0.02	14	1	20.10	0.40	56	1	4
					<i>I</i>	12.68	0.04	13	1	19.09	0.47	58	2	1
172	NGC 5962	105	0.28	1	<i>B</i>	12.19	0.04	31	1	21.14	0.26	171	7	1
					<i>V</i>	11.39	0.09	32	3	20.40	0.35	167	15	1
					<i>I</i>	10.42	0.12	31	4	19.31	0.44	180	32	2
173	NGC 5963	29	0.16	1	<i>V</i>	11.94	0.08	37	8	21.44	0.31	97	11	1
					<i>I</i>	11.15	0.03	28	2	20.04	0.26	119	6	2
174	NGC 6012	169	0.35	3	<i>B</i>	12.79	0.05	46	1	22.22	0.18	.....	.....	2

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	<i>m_T</i>	δm_T	<i>r_e</i>	δr_e	$\langle \mu \rangle_e$	$\delta \langle \mu \rangle_e$	<i>D_{iso}</i>	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
174	NGC 6012				<i>V</i>	11.89	0.03	45	1	21.49	0.19	137	12	2
					<i>I</i>	10.82	0.11	41	3	20.00	0.37	.....	.....	2
175	NGC 6015	28	0.52	1	<i>V</i>	11.19	0.03	55	1	21.24	0.16	240	20	2
					<i>I</i>	10.15	0.07	57	4	20.24	0.26	290	24	1
176	NGC 6140	138	0.24	1	<i>B</i>	12.07	0.11	82	6	22.91	0.64	225	5	2
					<i>V</i>	11.63	0.09	73	7	22.10	0.27	196	7	1
					<i>I</i>	10.72	0.16	76	10	21.26	0.43	227	33	3
177	NGC 6155	137	0.29	1	<i>I</i>	11.75	0.08	18	1	19.69	0.45	97	6	1
178	NGC 6181	177	0.50	1	<i>B</i>	12.53	0.02	23	1	20.65	0.09	152	3	1
					<i>V</i>	11.86	0.02	22	1	19.85	0.27	140	4	1
					<i>I</i>	10.74	0.03	22	1	18.68	0.29	153	4	1
179	NGC 6207	22	0.43	1	<i>V</i>	11.71	0.02	36	1	20.45	0.18	145	6	4
					<i>I</i>	10.79	0.04	36	1	19.57	0.22	161	10	1
180	NGC 6236	180	0.33	1	<i>V</i>	13.93	0.11	38	3	23.40	0.37	72	8	3
					<i>I</i>	12.89	0.26	33	6	21.91	0.75	92	19	4
181	NGC 6255	84	0.59	1	<i>V</i>	12.87	0.09	52	2	22.57	0.30	169	14	1
					<i>I</i>	11.97	0.11	53	3	21.69	0.34	191	14	2
182	NGC 6314	177	0.42	2	<i>B</i>	14.09	0.01	15	1	21.29	0.10	88	2	3
					<i>V</i>	13.14	0.02	17	1	20.67	0.35	86	9	3
					<i>R</i>	12.60	0.02	15	1	19.85	0.19	99	4	2
					<i>I</i>	11.96	0.21	18	7	19.60	0.77	.....	.....	3
183	NGC 6395	16	0.66	1	<i>I</i>	12.13	0.14	40	4	20.84	0.44	156	17	1
184	NGC 6503	121	0.66	2	<i>V</i>	9.69	0.01	131	3	21.09	0.06	362	30	2
					<i>I</i>	8.94	0.06	78	4	19.08	0.19	.....	.....	1
185	NGC 6643	40	0.50	1	<i>B</i>	11.69	0.08	42	4	21.28	0.65	.....	.....	2
					<i>V</i>	11.11	0.04	47	3	20.79	0.21	217	10	2
					<i>I</i>	10.15	0.11	43	5	19.71	0.36	236	28	2
186	NGC 6667	96	0.50	2	<i>V</i>	12.63	0.10	36	5	21.54	0.36	139	18	5
					<i>I</i>	11.19	0.06	30	2	19.84	0.30	.....	.....	4
187	NGC 6824	45	0.20	2	<i>B</i>	12.38	0.05	32	2	21.55	0.36	164	14	2
					<i>V</i>	11.64	0.08	29	2	20.39	0.35	139	5	3
					<i>R</i>	10.93	0.03	28	1	19.71	0.24	.....	.....	3
					<i>I</i>	10.27	0.04	27	1	19.01	0.26	.....	.....	3
188	NGC 6962	71	0.43	2	<i>B</i>	12.55	0.06	49	5	22.70	0.69	.....	.....	3
					<i>V</i>	12.06	0.03	36	1	21.58	0.20	195	15	3
					<i>R</i>	11.34	0.01	35	0	20.78	0.07	.....	.....	4
					<i>I</i>	11.24	0.18	17	4	19.12	0.72	.....	.....	4
189	NGC 7177	86	0.30	1	<i>B</i>	12.09	0.04	22	1	20.47	0.39	156	4	2
					<i>V</i>	11.26	0.03	20	1	19.39	0.32	148	5	2
					<i>R</i>	10.60	0.01	26	1	19.22	0.06	155	1	3
					<i>I</i>	10.17	0.08	18	2	18.16	0.45	158	15	4
190	NGC 7290	157	0.43	1	<i>I</i>	12.43	0.11	16	2	19.88	0.56	90	12	1
191	NGC 7328	88	0.60	2	<i>V</i>	12.98	0.01	18	1	20.73	0.30	111	8	1
192	NGC 7331	170	0.54	3	<i>B</i>	10.23	0.01	103	2	21.44	0.11	.....	.....	2
					<i>V</i>	9.28	0.01	91	2	20.23	0.08	.....	.....	2
					<i>I</i>	8.19	0.02	72	2	18.53	0.12	.....	.....	1
193	NGC 7339	93	0.68	1	<i>B</i>	13.15	0.03	40	1	21.52	0.22	176	4	1
					<i>V</i>	12.30	0.03	39	1	20.60	0.19	170	6	1
					<i>R</i>	11.64	0.01	39	1	19.86	0.07	172	2	1
					<i>I</i>	10.92	0.12	39	5	19.16	0.40	195	24	1

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	m_T	δm_T	r_e	δr_e	$\langle \mu \rangle_e$	$\delta \langle \mu \rangle_e$	D_{iso}	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
194	NGC 7448	172	0.52	1	<i>B</i>	12.26	0.01	27	1	20.73	0.08	162	2	2
					<i>V</i>	11.76	.....	25	1	20.09	0.22	147	5	2
					<i>R</i>	11.33	0.01	26	1	19.62	0.06	139	3	1
					<i>I</i>	10.91	0.11	25	2	19.09	0.45	154	16	1
195	NGC 7479	29	0.23	1	<i>B</i>	11.76	0.07	79	3	22.10	0.32	232	7	1
					<i>V</i>	11.02	0.06	73	3	21.23	0.21	225	6	2
					<i>R</i>	10.47	0.04	73	2	20.67	0.22	223	9	1
					<i>I</i>	9.95	0.10	68	5	19.92	0.31	235	14	2
196	NGC 7497	47	0.74	2	<i>V</i>	12.30	0.01	62	1	21.75	0.10	227	30	1
197	NGC 7537	78	0.72	2	<i>V</i>	13.23	0.01	17	1	20.42	0.31	111	9	1
198	NGC 7541	101	0.66	1	<i>B</i>	12.48	0.03	46	1	21.49	0.21	207	8	3
					<i>V</i>	11.74	0.03	45	1	20.63	0.18	194	12	3
					<i>I</i>	10.75	0.05	42	2	19.45	0.24	203	13	1
199	NGC 7606	146	0.62	2	<i>V</i>	10.98	0.01	58	1	20.88	0.11	284	15	1
200	NGC 7721	16	0.66	2	<i>V</i>	11.74	0.01	50	1	21.18	0.12	214	10	1
201	NGC 7741	99	0.63	1	<i>I</i>	10.99	0.06	48	1	20.72	0.25	.....	.....	1
202	NGC 7757	117	0.34	1	<i>B</i>	13.27	0.08	37	3	22.60	0.55	141	9	1
					<i>V</i>	12.75	0.08	37	3	22.10	0.32	126	19	1
					<i>I</i>	12.10	0.10	32	4	21.22	0.38	127	14	2
203	NGC 7814	135	0.55	3	<i>I</i>	9.02	0.10	67	10	19.40	0.29	.....	.....	1
204	NGC 7817	46	0.68	1	<i>B</i>	12.94	0.02	44	1	21.70	0.16	193	3	2
					<i>V</i>	12.11	0.02	43	1	20.81	0.17	189	6	3
					<i>R</i>	11.33	0.04	42	1	19.97	0.24	193	5	4
					<i>I</i>	10.74	0.05	42	2	19.37	0.23	211	11	4
205	UGC 614	68	0.50	1	<i>B</i>	14.26	0.06	20	1	22.12	0.35	86	3	5
					<i>V</i>	13.99	0.03	20	1	21.80	0.33	77	4	5
					<i>I</i>	13.42	0.25	19	4	21.19	0.83	77	9	4
206	UGC 622	162	0.40	2	<i>V</i>	13.50	0.01	17	1	21.13	0.32	72	2	1
207	UGC 1070	44	0.25	1	<i>B</i>	13.62	0.05	28	1	22.11	0.27	102	10	5
					<i>V</i>	14.01	0.07	27	1	22.39	0.34	69	4	5
					<i>I</i>	12.90	0.17	26	4	21.27	0.58	83	9	3
208	UGC 2855	109	0.56	1	<i>I</i>	10.01	0.06	59	4	20.11	0.23	293	19	1
209	UGC 2906	178	0.41	1	<i>I</i>	11.25	0.07	26	2	19.68	0.35	151	8	1
210	UGC 2955	97	0.69	2	<i>V</i>	14.40	0.01	17	1	21.47	0.31	78	6	5
211	UGC 3580	8	0.43	1	<i>V</i>	12.67	0.03	28	1	21.41	0.25	107	9	4
					<i>I</i>	11.57	0.11	31	5	20.61	0.42	134	35	1
212	UGC 3691	57	0.53	3	<i>I</i>	11.78	0.10	40	2	20.97	0.36	.....	.....	1
213	UGC 3828	5	0.34	1	<i>B</i>	13.49	0.06	23	1	21.78	0.30	107	6	5
					<i>V</i>	12.51	0.01	23	1	20.73	0.24	106	13	2
					<i>I</i>	11.98	0.14	22	3	20.14	0.56	106	14	5
214	UGC 3876	179	0.48	1	<i>B</i>	13.77	0.30	39	10	23.04	1.93	136	28	3
					<i>V</i>	13.11	0.15	36	5	22.23	0.50	121	10	3
					<i>I</i>	12.22	0.12	36	4	21.32	0.42	131	15	2
215	UGC 4159	93	0.53	1	<i>I</i>	13.14	0.03	12	1	19.77	0.49	66	2	1
216	UGC 4169	139	0.48	1	<i>V</i>	13.32	0.02	25	1	21.62	0.25	97	4	2
					<i>I</i>	12.56	0.07	24	1	20.80	0.37	100	5	1
217	UGC 4238	81	0.59	3	<i>I</i>	12.05	0.12	42	3	21.18	0.39	.....	.....	1
218	UGC 4267	37	0.44	1	<i>V</i>	14.08	0.01	11	1	20.70	0.46	54	6	5
					<i>I</i>	13.22	0.05	11	1	19.80	0.55	57	4	2
219	UGC 4375	3	0.31	1	<i>V</i>	12.44	0.03	30	1	21.45	0.23	140	13	1

Table 4. continued

#	Object	<i>PA</i>	ϵ	<i>C</i>	<i>F</i>	m_T	δm_T	r_e	δr_e	$\langle\mu\rangle_e$	$\delta\langle\mu\rangle_e$	D_{iso}	δD_{iso}	<i>Q</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
219	UGC 4375				<i>I</i>	11.40	0.17	28	4	20.35	0.57	148	19	1
220	UGC 4393	49	0.32	1	<i>I</i>	12.58	0.22	20	5	20.29	0.74	89	15	1
221	UGC 4621	142	0.49	1	<i>B</i>	14.03	0.11	16	1	21.15	0.60	78	11	3
					<i>V</i>	13.31	0.15	17	2	20.47	0.64	74	7	3
					<i>I</i>	12.39	0.11	15	1	19.29	0.58	77	11	2
222	UGC 5588	38	0.28	3	<i>I</i>	13.60	0.02	9	1	19.93	0.62	.....	.....	4
223	UGC 5738	34	0.32	1	<i>V</i>	14.28	0.02	10	1	20.84	0.55	49	4	5
					<i>I</i>	13.09	0.04	10	1	19.66	0.59	57	3	2
224	UGC 5897	73	0.66	1	<i>V</i>	13.50	0.07	43	3	22.42	0.29	135	10	1
					<i>I</i>	12.22	0.07	39	3	20.96	0.29	161	6	3
225	UGC 6162	82	0.41	1	<i>V</i>	13.52	0.05	43	1	22.86	0.22	115	9	3
					<i>I</i>	12.32	0.05	44	1	21.72	0.22	136	4	3
226	UGC 6711	136	0.30	1	<i>I</i>	12.84	0.03	10	1	19.49	0.59	60	6	1
227	UGC 6930	3	0.17	1	<i>V</i>	12.11	0.06	51	2	22.60	0.23	147	10	2
					<i>I</i>	11.09	0.12	58	8	21.88	0.36	182	19	1
228	UGC 8693	172	0.59	1	<i>I</i>	12.91	0.07	21	2	20.40	0.40	87	2	1
229	UGC 9123	130	0.09	1	<i>I</i>	14.15	0.13	21	1	22.41	0.53	49	3	1
230	UGC 9356	104	0.54	1	<i>I</i>	12.85	0.02	16	1	20.23	0.35	86	1	1
231	UGC 11000	161	0.33	1	<i>V</i>	13.56	0.01	12	1	20.47	0.43	76	10	4
					<i>I</i>	12.88	0.05	13	1	19.82	0.51	59	5	2
232	UGC 11909	5	0.73	1	<i>I</i>	11.27	0.01	54	1	20.49	0.12	.....	.....	4
233	UGC 11973	43	0.75	1	<i>B</i>	13.44	0.02	40	1	22.17	0.10	197	1	2
					<i>V</i>	12.65	0.03	39	1	21.26	0.19	188	7	2
					<i>R</i>	12.48	0.02	38	1	21.04	0.11	174	4	4
					<i>I</i>	11.86	0.16	36	4	20.26	0.51	190	26	4
234	UGC 12843	32	0.30	1	<i>I</i>	10.06	0.08	9	1	16.18	0.75	150	20	1

Fig. 10. Profiles for 230 galaxies. Abscissae: isophote semi-major axis r (in arcsec). Ordinates: *top*, surface brightness μ in mag arcsec $^{-2}$ (open squares: *I*; filled circles: *R*; triangles: *V*; and crosses: *B*); *middle*, ellipticity ϵ , measured on the *I* images in most cases (see Sect. 3.5); *bottom*, position angle PA, determined in the same band as ϵ , from North through East. The morphological type T is indicated to the right of the identification

Fig. 10. continued

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