

PUBLICATIONS OF  
THE DAVID DUNLAP OBSERVATORY  
UNIVERSITY OF TORONTO

VOLUME II

NUMBER 6

A RECLASSIFICATION OF THE  
NORTHERN SHAPLEY-AMES  
GALAXIES

SIDNEY VAN DEN BERGH

1960  
TORONTO, CANADA



# A RECLASSIFICATION OF THE NORTHERN SHAPLEY-AMES GALAXIES

## INTRODUCTION

The Shapley-Ames catalogue of galaxies brighter than the thirteenth magnitude, which was published almost thirty years ago, is still the only complete survey of bright extra-galactic nebulae, which covers the entire sky. The nebular types given in the Shapley-Ames (1932) catalogue were derived from thirteen different sources and are both inhomogeneous and incomplete. The recent publication of the Palomar Sky Survey has made it possible to reclassify all the northern Shapley-Ames galaxies on a homogeneous system. 935 of the 1,249 galaxies contained in the Shapley-Ames catalogue are located in the region north of  $\delta = -27^\circ$ , which is covered by the Palomar Sky Survey.

## THE CATALOGUE

The first three columns contain the name of each galaxy and its 1950 co-ordinates, taken from the Shapley-Ames catalogue. For convenience the entries have been arranged in order of increasing NGC or IC number, rather than by right ascension for 1950.

The fourth column contains the DDO type and luminosity class. The classification system for galaxies of types Sb, Sc, Ir, SD and N has been described elsewhere (van den Bergh 1960a, 1960b).

A short description of types E, Sa and SBa is given below:

E—Unresolved galaxies with elliptical isophotes. Surface brightness decreases smoothly with increasing distance from the nucleus. E and S0 galaxies cannot be distinguished on the Sky Survey prints. Highly flattened objects of type S0 have therefore been denoted by the symbols E8 and E9.

Sa—Unresolved galaxies with more or less elliptical isophotes. Surface brightness decreases more abruptly at edge of disk than in type E.

SBa—Smooth unresolved main body and bar. In some cases surrounded by unresolved halo or ring segments.

The spectral types in column 5 were taken from Humason *et al.* (1956). The Yerkes concentration class Y in column 6 was taken from Morgan (1958). The integrated colours  $C_0$  in column 7 were taken

from Holmberg (1958) and corrected for galactic absorption by the equation

$$C_0 = C - 0.06 \operatorname{cosec} |b'| \quad (1)$$

The diameters in column 8 were measured on the blue prints of the Palomar Sky Survey. For galaxies of types Sa, Sb, Sc and Ir the diameters are maximum diameters. On the whole these diameters agree rather well with those given in the Shapley-Ames catalogue. From those galaxies with diameters  $\varphi \geq 1.0$  minutes of arc one obtains

$$\text{Sb I, I-II, II} \quad \bar{\varphi}_{\text{SA}} = 1.00 \bar{\varphi}_{\text{DDO}} \quad (2)$$

$$\text{Sc I, I-II, II} \quad \bar{\varphi}_{\text{SA}} = 0.98 \bar{\varphi}_{\text{DDO}} \quad (3)$$

$$\text{Sc II-III, III, III-IV} \quad \bar{\varphi}_{\text{SA}} = 1.07 \bar{\varphi}_{\text{DDO}} \quad (4)$$

$$\text{S IV, IV-V, V} \quad \bar{\varphi}_{\text{SA}} = 1.06 \bar{\varphi}_{\text{DDO}} \quad (5)$$

The smooth radial decrease of the surface brightness in elliptical galaxies makes it impossible to determine maximum diameters with confidence. The diameters which are given in the catalogue might be described as "diameters of maximum contrast" on the Sky Survey prints. It should be emphasized that these diameters are quite uncertain. For elliptical galaxies the relation between the Shapley-Ames and DDO diameters is given by

$$\text{E} \quad \bar{\varphi}_{\text{SA}} = 1.36 \bar{\varphi}_{\text{DDO}} \quad (6)$$

The apparent integrated magnitudes of galaxies were taken from the following sources and are listed in order of preference:

1. Holmberg (1958).
2. Stebbins and Whitford (1952).
3. Humason *et al.* (1956).
4. Pettit (1954).
5. Shapley and Ames (1932).

The Pettit and the Stebbins and Whitford magnitudes were not used in those cases in which the maximum diameter of the galaxy greatly exceeded the size of the diaphragm used in their photoelectric observations. Only magnitudes by Holmberg are given in two decimals.

Column 10 gives the distance moduli of those galaxies to which luminosity classes could be assigned. The magnitude calibration was

taken from Table I. The apparent distance moduli were corrected for galactic absorption by the equation

$$(m-M)_0 = (m-M) - 0.24 \operatorname{cosec} |b^l| \quad (7)$$

Those distance moduli in column 11 which are given to one decimal were derived from the observed radial velocities of individual field

TABLE I  
MAGNITUDE CALIBRATION OF LUMINOSITY CLASSES

Type and Class	$\bar{M}_{pg}$	Type and Class	$\bar{M}_{pg}$
Sb I	-20.4	Sc I	-20.0
Sb I-II	-19.9	Sc I-II	-19.7
Sb II	-19.4	Sc and Ir II	-19.4
Sb II-III	-18.6	Sc and Ir II-III	-18.9
Sb III	-18.0	Sc and Ir III	-18.3
		Sc and Ir III-IV	-18.0:
		S and Ir IV	-17.3:
		S and Ir IV-V	-16.1:

galaxies. Those given to two decimals were obtained from the mean redshifts of cluster members. A Hubble constant of 100 km./sec./mpc. was assumed.

The number of individual distance moduli obtained by different methods are given below:

From DDO luminosity classifications.....	411
From radial velocities of field nebulae.....	365
From cluster moduli.....	244

An asterisk in the last column refers to a note at the end of the table.

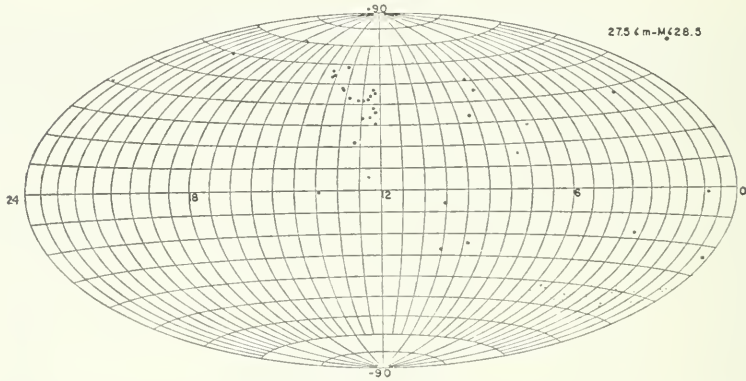
### THE SPACE DISTRIBUTION OF GALAXIES

The catalogue contains distance moduli for 82 per cent. of the northern Shapley-Ames galaxies. The data are therefore sufficiently complete to investigate the spatial distribution of the nearer galaxies:

$$26.5 \leq m-M_0 \leq 27.5$$

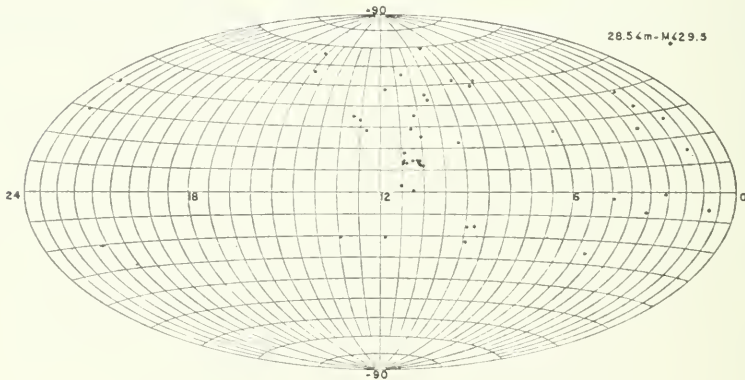
Eight of the ten Shapley-Ames galaxies within this distance interval are members of the M81 group.

$$27.5 \leq m-M_0 \leq 28.5 \text{ (Figure 1)}$$



Most of the galaxies in this distance interval are members of the Canes Venatici cluster. No other clusters are apparent in the figure.

$$28.5 \leq m-M_0 \leq 29.5 \text{ (Figure 2)}$$



Only two small clusters show on the figure. They are the M96 group ( $\alpha \simeq 10^{\text{h}}40^{\text{m}}$ ,  $\delta \simeq +13^\circ$ ) with  $\bar{V}_c = +676$  km./sec. and the M66 group ( $\alpha \simeq 11^{\text{h}}10^{\text{m}}$ ,  $\delta \simeq +14^\circ$ ) with  $\bar{V}_c = +598$  km./sec. The small difference in radial velocity and the small angular separation of these two groups suggests that they are physically associated.

(Continued on page 196)

NGC	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	$C_0$	Diameter	mpg	$m-M_0(M)$	$m-M_0(V)$	N
16	$0^h06^m5$	+27°27'	E3	G5	k	---	$1.0 \times 0.7$	13.2	--	32.6	--
23	07.3	+25 39	S(t <sup>p</sup> )	F5	g	---	--	13.0	--	33.4	--
24	07.4	-25 15	Sb III	--	--	---	$5.0 \times 0.7$	12.2	30.0	--	--
45	11.4	-23 27	S- IV-V	Em	f	---	$8.0 \times 5.5$	12.1:	28.0:	28.4:	--
95	19.6	+10 12	Sc*:	--	--	---	$1.1 \times 0.9$	13.1	--	--	--
128	26.7	+02 33	E8	G7	k	---	$2.2 \times 0.4$	12.7	--	33.2	--
147	30.4	+48 14	E4:p	--	--	0.59	$4.5 \times 2.5$ :	10.57	--	--	--
151	31.6	-09 58	Sb* II:	--	--	---	$3.1 \times 1.1$	12.4	31.6:	--	--
157	32.3	-08 40	Sc(*) I	G4	af	0.65	$2.8 \times 2.1$	11.17	30.9	31.4	--
175	34.9	-20 12	Sbb I	--	--	---	$1.2 \times 1.2$	12.8	33.0	--	--
178	36.6	-14 27	Pec(t <sup>p</sup> )	--	--	---	$1.2 \times 0.7$	13.0	--	--	*
185	36.1	+48 04	E0:	G0	--	0.62	$2.2 \times 2.2$ :	10.29	--	--	--
205	37.6	+41 25	E6:(t <sup>p</sup> )	A8	--	0.54	$10: \times 4.5$	8.89	--	--	--
210	38.0	-14 09	Sb- I	--	--	---	$4.5 \times 2.4$	11.8	32.0	31.3	--
214	38.7	+25 14	Sb I	G3	g	---	$1.6 \times 1.0$	12.8	32.8	33.4	--
221	40.0	+40 36	E2	G3	k	0.74	$3.4 \times 2.8$	9.06	--	--	--
224	40.0	+41 00	Sb I-II	G5	k	0.70	$160: \times 35:$	4.33	23.6	--	--
227	40.1	-01 48	E2 or Sa	G3	--	---	$0.8 \times 0.6$	13.5	--	33.7	--
237	40.9	-00 24	Sc II:	--	--	---	$1.2 \times 0.8$	13.2	32.3:	--	--
245	43.7	-01 59	Ir or Sc	--	--	---	$1.0 \times 1.0$	12.9	--	--	--
247	44.6	-21 01	S- IV	Em	a	---	$18.2 \times 4.5$	9.47	26.5	--	--
253	45.1	-25 34	Sc(*)p or SD	Em	af:	---	$24.6 \times 4.5$	7.0:	--	--	--
255	45.2	-11 45	Sb <sup>n</sup> II:	--	--	---	$3.3 \times 2.5$	12.4	31.6:	31.5	--
268	47.6	-05 28	Sc II	--	--	---	$1.1 \times 0.9$	13.2	32.3	--	--
274	48.5	-07 20	E1	--	--	---	$0.9 \times 0.8$	13.0	--	--	--
275	48.5	-07 20	St	--	--	---	$1.1 \times 0.8$	13.0	--	--	*
278	49.2	+47 18	E0(p <sup>p</sup> )	F0	f	---	$1.3 \times 1.3$	11.5	--	29.7	--
309	54.0	-10 13	Sc I-II	--	--	---	$2.4 \times 2.1$	12.5	32.0	--	--
337	57.3	-07 51	Scn II-III:	--	--	---	--	12.2	30.8:	--	--
357	$1^h00.8$	-06 37	Sba	G4	--	---	$1.6 \times 1.1$	13.0	--	32.1	--

NGC	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	$C_0$	Diameter	mpg	$m-M_0(M)$	$m-M_0(V)$	N
404	$1^h 06^m 6$	$+35^\circ 27'$	E0	F8	-	0.79	$2.1 \times 2.0$	11.16	--	25.9:	-
428	10.4	$+00 43$	Sep III-IV	--	af:	0.24	$3.9 \times 3.6$	11.74	29.5	30.3	-
450	13.0	$-01 07$	S IV-V	--	-	--	$2.6 \times 2.0$	12.6	28.4:	--	-
470	17.1	$+03 09$	Sc*	--	f	--	$1.7 \times 1.1$	12.4	--	--	-
473	17.5	$+16 14$	E4(p?)	--	g?	--	$1.0 \times 0.6$	13.1	--	--	-
474	17.5	$+03 10$	Et	G5	-	--	--	13.0	--	31.9	*
488	19.1	$+05 00$	Sb- I	G7	k	0.78	$4.2 \times 3.3$	11.10	31.2	31.8	-
514	21.3	$+12 39$	Sc I-II:	G0	af	--	$2.7 \times 2.2$	12.3	31.7:	32.1	-
520	22.0	$+03 32$	Pec	--	ff?	0.74	--	12.85	--	31.7	*
521	22.0	$+01 28$	S(H)b(n?)	--	k	--	--	13.0	--	--	-
524	22.1	$+09 16$	E1	G3	-	--	$1.8 \times 1.7$	11.6	--	32.1	-
533	22.9	$+01 30$	E2:	--	k	--	$0.9 \times 0.7$ :	13.0	--	--	-
578	28.0	$-22 56$	Sc II	--	af	0.32	$4.1 \times 2.2$	11.37	30.5	31.5	-
584	28.8	$-07 07$	E4	G5	k	--	$1.6 \times 1.0$	11.4	--	31.4	-
596	30.3	$-07 17$	E2	G3	-	--	$1.5 \times 1.2$	12.1	--	31.6	-
598	31.1	$+30 24$	Sc II-III	A7	f	0.28	$65 \times 35$	6.19	24.6	--	-
615	32.6	$-07 35$	Sb II-III	--	-	--	$2.5 \times 1.0$	12.6	30.9	--	-
628	34.0	$+15 32$	Sc I	F5	fg	0.32	$10.6 \times 9.0$	9.74	29.4	29.2	-
636	36.6	$-07 45$	E1	G5	-	--	$0.9 \times 0.8$	12.4	--	31.5	-
670	44.5	$+27 38$	E4	--	-	--	$0.9 \times 0.5$	13.0	--	--	-
672	45.0	$+27 11$	Sbc III	--	a	0.34	$5.5 \times 1.5$	11.31	29.2	28.5:	-
681	46.7	$-10 40$	SD-	G5	-	--	$1.6 \times 0.8$	12.8	--	31.2	-
701	48.6	$-09 57$	S(n*)	--	-	--	$2.2 \times 0.8$	12.7	--	--	-
718	50.7	$+03 57$	Sbn	--	gk	--	$1.2 \times 1.0$	12.5	--	31.4	-
720	50.6	$-13 59$	E3	G4	k	--	$1.6 \times 1.1$	11.3	--	31.3	-
741	53.8	$+05 23$	E1	G5	k	--	$0.9 \times 0.8$	13.0	--	33.8	-
750	54.6	$+32 58$	E	G7	g	--	$-- \times 0.6$	13.7	--	33.6	-
753	54.6	$+35 41$	Sc II:	--	f	0.35	$1.9 \times 1.6$	12.91	31.7:	33.5	-
772	56.6	$+18 46$	Sbnt I	G4	f	0.58	--	11.10	31.1	32.0	-
777	57.3	$+31 12$	E2	--	-	--	$0.9 \times 0.7$	13.0	--	--	-



NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	$m-M_0$ (M)	$m-M_0$ (V)	N
779	1 <sup>h</sup> 57 <sup>m</sup> 2	-06°12'	Sb <sup>-</sup> II-III	--	g	--	3.7 x 0.9	11.9	30.2	--	--
788	58.6	-07 03	Sa	G0:	--	--	1.2 x 0.9	12.4	--	33.1	--
821	2 <sup>h</sup> 05.6	+10 46	E2	G5	--	--	1.2 x 0.9	12.0	--	31.4	--
864	12.8	+05 45	Sc II	--	--	--	3.5 x 2.3	11.6	30.7	31.1	--
877	15.3	+14 19	Sc I:	--	af	--	1.7 x 1.1	12.4	32.0:	33.1	--
890	19.1	+33 02	E4	G4	k:	--	1.1 x 0.7	12.6	--	33.1	--
891	19.3	+42 07	Sb	G1	gk:	0.61	11.8 x 1.1	10.85	--	27.0:	--
895	19.1	-05 45	Sb <sup>+</sup> II	--	--	--	2.8 x 2.2	12.2	31.3	--	--
908	20.8	-21 27	Sc I	--	af	0.48	5.0 x 2.3	10.74	30.5	31.1	--
922	22.9	-25 01	Scp II-III:	--	--	--	1.2 x 1.2	12.4	31.0:	--	--
925	24.3	+33 22	S(B)c II-III	F0	af	0.25	9.5 x 4.3	10.53	28.8	29.1	--
936	25.1	-01 22	SBa	G3	k	0.81	3.3 x 2.5	11.21	--	30.7	--
941	26.0	-01 22	Sc III-IV	--	--	0.32	1.9 x 1.3	12.84	30.5	--	--
949	27.6	+36 56	SD?	--	--	--	1.2 x 0.5	12.8	--	--	--
955	28.0	-01 19	E8	--	--	--	2.0 x 0.5	13.1	--	--	--
958	28.1	-03 09	S(B)?b <sup>+</sup> I-II	--	--	--	1.8 x 0.6	13.0	32.6	--	--
972	31.3	+29 06	Sc(n) II:	F3	a?	--	2.5 x 0.9	12.1	31.0:	31.1	--
976	31.2	+20 44	Sbn II:	--	f	--	1.1 x 1.0	12.7	31.7:	--	--
991	33.2	-07 22	S IV:	--	--	--	1.8 x 1.8	12.7	29.7:	--	--
1022	36.1	-06 53	Sbn	--	--	--	1.8 x 1.4	12.0	--	--	--
1023	37.2	+38 52	E7p	G5	--	0.78	4.0 x 1.2	10.48	--	29.3	--
1035	37.0	-08 20	Pec or Sc*	--	--	--	1.9 x 0.6	12.8	--	--	--
1048	38.2	-08 45	Scn	--	--	--	4.5 x 2.6	12.5	--	--	--
1052	38.6	-08 28	E2	G5	k	0.73	1.3 x 1.0	11.69	--	30.8	--
1055	39.2	+00 16	Sb II-III	--	--	0.70	6.7: x 1.5	11.38	29.7	--	--
1058	40.2	+37 08	Sc* III-IV:	--	af	0.36	--	11.74	29.0:	26.7:	--
1068	40.1	-00 14	Sbp	F0:	g	0.64	6.0 x 5.0	9.63	--	30.2	--
1073	41.2	+01 10	S(B)c II	--	af	0.33	4.5 x 4.2	11.43	--	31.4	--
1084	43.5	-07 47	Sc I-II:	F5	a	--	2.1 x 1.1	11.1	30.5	30.9	--
1087	43.9	-00 42	Sc* III:	F0	a	0.35	2.2 x 1.2	11.45	29.4:	31.3	--

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	$m-M_0(M)$	$m-M_0(V)$	N
1090	2 <sup>h</sup> 44 <sup>m</sup> 0	-00° 27'	S <sup>n</sup> IV:	--	f	0.45	2.8 x 1.0	12.51	29.5:	--	--
1140	52.2	-10 14	Pec	F2:	--	--	1.1 x 0.5	12.8	--	30.9	--
1156	56.7	+25 03	Ir <sup>+</sup> IV:	Em	a	0.25	--	11.85	28.6:	28.5:	--
1169	3 <sup>h</sup> 00.1	+46 12	S(B)b <sup>-</sup> II?	--	fg	--	2.2 x 1.9	13.0	--	--	--
1172	59.3	-15 02	E1	--	--	--	0.8 x 0.7	13.1	--	--	--
1175	01.3	+42 08	Snn:	--	k	--	1.1 x 0.2	13.0	--	--	--
1179	59.7	-19 06	Sp or N	--	--	--	5.4 x 3.1	13.0	--	--	--
1187	00.4	-23 04	S(B) <sup>p</sup> c I	--	af	--	5.5 x 3.7	11.3	31.0	30.8	--
1199	01.3	-15 48	E2	G2	--	--	0.9 x 0.7	12.7	--	32.0	--
1201	02.0	-26 15	Sa	G5	--	--	2.2 x 1.2	11.7	--	31.1	--
1209	03.8	-15 48	E5	G4	--	--	1.1 x 0.5	12.6	--	32.0	--
1232	07.5	-20 46	Sc I	--	f	0.39	7.0 x 5.5	10.46	30.2	31.2	--
1241	08.8	-09 07	Sb <sup>+</sup> t	--	--	--	1.8 x 1.0	13.0	--	--	--
1255	11.4	-25 58	Sc II	--	--	--	3.5 x 2.2	12.1	31.2	--	--
1270	15.6	+41 18	E2	G4	--	--	0.6 x 0.5	12.7	--	33.5	--
1297	17.0	-19 16	E2	--	--	--	1.0 x 0.8	13.0	--	--	--
1300	17.5	-19 35	Sbb I	--	f	0.46	5.7 x 3.5	11.11	31.2	30.9	--
1302	17.7	-26 14	S(B)a	G3	k	--	3.4 x 3.2	11.1	--	31.0	--
1309	19.8	-15 35	Sc II-III	--	f	--	1.9 x 1.7	11.8	30.4	--	--
1325	22.3	-21 43	Sbn(*)	--	--	0.58	4.2 x 1.1	12.22	--	--	--
1332	24.1	-21 31	E7	G2	k	--	3.4 x 1.0	11.0	--	30.9	--
1337	25.6	-08 34	S <sup>-</sup> IV:	--	--	0.35	5.2 x 0.9	12.26	29.2:	--	--
1353	29.8	-21 00	Sb II-III	--	--	--	2.5 x 0.9	12.4	30.7	--	--
1357	30.9	-13 50	S	--	--	--	1.4 x 0.9	12.5	--	--	--
1358	31.2	-05 16	S(B)b <sup>-</sup> II:	--	--	--	2.0 x 1.2	13.1	32.2:	--	--
1359	31.5	-19 41	Sb <sup>+</sup> p IV	--	--	--	1.6 x 1.3	12.5	29.5	31.4	--
1371	32.8	-25 06	S(B)a	--	--	--	5.6 x 3.5	12.2	--	--	--
1376	34.7	-05 12	Sc II-III:	--	--	--	1.4 x 1.3	12.9	31.4:	--	--
1385	35.2	-24 40	Sc I-II	--	af	--	2.4 x 1.8	11.5	30.9	31.4	--
1395	36.3	-23 11	E3	G7	k	--	2.1 x 1.4	11.4	--	31.1	--

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	m- $M_0$ (M)	m- $M_0$ (V)	N
1398	$3^h 36^m 8$	-26° 30'	S(B)b <sup>-</sup> I	--	k	--	$6.8 \times 4.5$	10.4	30.5	30.7	-
1400	37.2	-18 51	E1	G4	--	--	$0.8 \times 0.7$	12.3	--	27.9:	-
1407	37.9	-18 44	G3	G3	--	--	$1.1 \times 1.1$	11.2	--	31.2	-
1415	38.7	-22 43	Sb <sup>+</sup> (t?) III	F8	--	--	$1.7 \times 0.8$	12.8	30.5	30.7	*
1417	39.5	-04 48	Sb I-II;	G0	--	--	$1.7 \times 1.1$	12.9	32.4:	33.0	-
1421	40.2	-13 40	Sb <sup>+</sup> I:	--	--	--	$3.0 \times 0.6$	12.0	32.1:	--	-
1426	40.6	-22 16	E2	G4	--	--	$1.0 \times 0.8$	12.6	--	30.5	-
1439	42.6	-22 05	E1	G2	--	--	$1.0 \times 0.9$	12.9	--	31.4	-
1440	42.8	-18 27	S(B)a	--	--	--	$1.0 \times 0.7$	13.0	--	--	-
1452	43.1	-18 47	SBa	--	--	--	$1.7 \times 0.9$	13.0	--	--	-
1453	44.0	-04 08	E2	G0	--	--	$0.8 \times 0.6$	12.9	--	33.0	-
1461	46.1	-16 32	Sa	--	--	--	$1.9 \times 0.5$	12.8	--	--	-
1507	$4^h 01.8$	-02 20	S	--	--	--	$3.2 \times 0.5$	12.9	--	--	-
1518	04.7	-21 18	Scp or S(B)cp	--	a	--	$2.4 \times 0.9$	12.3	--	29.7	-
1521	06.2	-21 11	E3	G5	--	--	$0.7 \times 0.5$	13.0	--	33.0	-
1569	26.0	+64 45	Irp III-IV?	Em	a	--	$2.1 \times 0.8$	11.75	--	25.4:	-
1600	29.2	-05 10	E2	G7	--	--	$0.8 \times 0.6$	12.2	--	33.4	-
1625	34.6	-03 24	S(n)	--	--	--	$1.8 \times 0.3$	13.1	--	--	-
1637	38.9	-02 56	Scn	F8	f	0.38	$2.6 \times 1.9$	11.26	--	28.6:	-
1638	39.1	-01 53	E2	--	--	--	$0.6 \times 0.5$	13.1	--	--	-
1640	40.1	-20 32	Smb <sup>-</sup> II	--	--	--	$2.0 \times 1.1$	12.4	31.4	30.9	-
1659	44.0	-04 53	Sc* III	--	--	--	$1.1 \times 0.9$	13.2	31.0	--	-
1667	46.2	-06 24	Sb <sup>+</sup> II:	--	--	--	$1.0 \times 0.8$	12.9	31.8:	--	-
1700	54.4	-04 56	E1t	G4	--	--	$0.9 \times 0.8$	12.1	--	32.9	-
1726	57.3	-07 49	E2	--	--	--	$0.6 \times 0.5$	13.0	--	--	-
1744	57.9	-26 06	S(H)c III:	--	--	--	$7.6 \times 3.1$	12.1	30.0:	28.4:	-
1784	$5^h 03.2$	-11 56	S(H)c II:	--	--	0.44	$4.5 \times 2.3$	12.39	31.3:	--	-
1832	10.0	-15 47	Sc II	G4	--	--	$2.2 \times 1.1$	12.0	30.9	31.4	-
1961	36.8	+69 24	Sbn1p I(?)	--	f	0.45	$3.7 \times 1.6$	11.68	--	33.0	-
1964	31.2	-21 59	Sb II	--	--	0.54	$5.4 \times 1.1$	11.61	30.4	31.1	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
2139	5 <sup>h</sup> 58 <sup>m</sup> .6	-23°49'	Sop	--	--	--	1.6 x 1.3	11.9	--	31.1	--
2146	6 <sup>h</sup> 10.7	+78 23	Snnt	F0:	--	0.44	5.1 x 2.8	11.26	--	29.9	--
2149	01.1	-09 44	--	--	--	--	--	--	--	--	*
2179	05.9	-21 44	Sa	--	--	--	0.9 x 0.7	13.0	--	--	--
2196	10.1	-21 47	Sb I-II:	--	--	--	1.7 x 1.3	12.6	31.7:	--	--
2207p	14.3	-21 21	Sct I:	G1	--	--	2.8 x 1.9	11.4	30.6:	32.0	*
2207f	14.3	-21 21	St	G1	--	--	2.1 x 0.9	--	--	--	*
2217	18.7	-27 14	Sba	G2	--	--	3.1 x --	11.8	--	30.6	--
2223	22.5	-22 49	S(B)b <sup>-</sup> II: or N	--	--	--	--	12.7	--	--	--
2268	7 <sup>h</sup> 01.3	+84 30	Sbn:	--	f	0.48	2.3 x 1.5	12.18	--	32.0	--
2276	11.0	+85 52	Sc* I:	--	af	0.24	2.2 x 1.9	11.91	31.4:	32.1	--
2300	16.5	+85 +60	E1	G5	k	0.90	1.0 x 0.9	12.25	--	31.7	--
2314	03.8	+75 19	E1 p?	G5	k	--	0.7 x 0.6	13.3	--	33.0	--
2336	16.2	+80 20	Sb I or Sc I	--	f	0.39	5.7 x 2.8	11.03	30.7	31.9	--
2339	05.4	+18 52	Sc II-III	G0	af	--	2.1 x 1.3	12.5	30.4	31.8	--
2347	11.6	+64 54	Sbn:	--	--	--	1.0 x 0.8	13.1	--	33.3	--
2366	23.6	+69 08	S <sup>+</sup> IV-V or Ir <sup>+</sup> IV-V	--	a	0.22	4.5: x 2.0:	11.41	27.0:	26.53	--
2403	32.0	+65 43	Sc III	F2	a	0.20	16.8: x 10.0:	8.80	26.6	26.53	--
2441	47.1	+73 06	Sc II:	--	af	--	1.2 x 1.0	13.0	32.0:	32.9	--
2460	52.7	+60 31	Sb <sup>+</sup> t III:	G2	g	--	--	12.7	30.2:	30.9	--
2500	58.2	+50 54	S <sup>+</sup> IV	--	a	0.35	2.5 x 1.9	12.13	29.0	28.5:	--
2523	8 <sup>h</sup> 09.2	+73 45	Sbb <sup>-</sup> I	--	fg	--	2.3 x 1.1	12.6	32.6	32.8	--
2525	03.3	-11 17	S(B)op II?	--	g	--	2.4 x 1.3	12.80	--	31.3	--
2537	09.7	+46 09	SD:	Em	a	--	1.1 x 1.0	12.3	--	27.8:	--
2541	11.1	+49 15	S <sup>+</sup> IV	--	af	0.28	4.9 x 2.2	11.88	28.8	--	--
2545	11.3	+21 30	Sb(t?)	--	g	--	1.1 x 0.9	13.0	--	--	--
2549	14.9	+57 58	E6	G4	gk	--	1.8 x 0.7	12.2	--	30.3	--
2551	18.8	+73 35	Sb III: or Sbn	--	--	--	1.2 x 0.8	13.2	--	32.0	--
2552	15.4	+50 11	Ir <sup>+</sup> IV-V	--	a	--	2.6 x 2.0	12.5	28.2:	--	--
2608	32.2	+28 38	Sc II:	F5	a/af	--	1.7 x 0.9	12.8	31.8:	31.6	--

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
2613	8 <sup>h</sup> 31 <sup>m</sup> 1	-22° 48'	Sb II	G1	gk	-	6.6 x 1.3	10.9	29.2:	30.7	-
2638	42.7	+74 18	Sb <sup>+</sup> bp	G5	f	-	2.0 x 1.1	12.8	--	31.9	-
2639	40.1	+50 24	Sa	G5	-	-	1.2 x 0.6	12.6	--	32.6	-
2642	38.3	-03 57	S(B)b I	--	-	-	1.8 x 1.8	12.7	32.5	33.1	-
2646	44.6	+73 40	?	--	-	-	0.5 x 0.3	13.1	--	32.8	-
2654	44.3	+50 28	Sb <sup>-</sup> II-III	G5	-	-	3.7 x 0.5	12.6	30.8	30.8	-
2655	49.4	+78 25	Snn	G1	-	0.65	5.0: x 3.4:	10.92	--	30.8	-
2672	46.6	+19 16	E1	G4	-	-	0.8 x 0.7	13.2	--	33.1	-
2681	50.0	+51 31	Sa or Snn	F8	k	0.59	2.8 x 2.5	11.33	--	29.4	-
2683	49.6	+33 38	Sb <sup>-</sup> II-III	G0	g	0.72	8.0 x 1.3	10.53	28.8	27.3:	-
2685	52.2	+58 59	Sbp II-III:	G5	k	0.57	3.0: x 1.6	12.04	30.3:	29.9	-
2693	53.5	+51 33	Ep	G2	k	-	0.8 x 0.6	13.2	--	33.5	-
2701	55.5	+53 59	Sc II	--	a/af	-	1.6 x 1.0	12.5	31.5	--	-
2712	56.2	+45 07	Sb <sup>+</sup> I	G1	fg	-	2.3 x 1.1	12.8	32.8	31.3	-
2713	54.8	+03 08	Sb II	--	g	-	3.2 x 1.0	12.7	31.6	--	-
2715	9 <sup>h</sup> 02.0	+78 16	Sc* II	--	af	0.34	4.4 x 1.1	11.87	30.8	30.6	-
2732	07.3	+79 24	SD:	--	k	-	1.3 x 0.5	12.7	--	31.8	-
2742	03.7	+60 41	Sc II	--	af	-	2.5 x 1.0	12.5	31.5	--	-
2748	08.2	+76 41	Sc	--	af	-	2.3 x 0.8	12.3	--	31.1	-
2749	02.5	+18 31	E2	G0	k	-	0.8 x 0.6	13.5	--	33.0	-
2763	04.6	-15 17	S <sup>-</sup> IV:	--	-	0.32	1.7 x 1.7	12.57	29.2:	--	-
2764	05.4	+21 39	Ep	--	-	-	0.9 x 0.5	13.3	--	--	-
2768	07.8	+60 16	E5	G5	k:	-	2.0 x 1.0	11.2	--	30.9	-
2775	07.7	+07 15	Sa or Sb <sup>-</sup> II:	G3	gk	-	2.3 x 1.9	11.3	--	29.9	-
2776	08.9	+45 11	Sc II	--	f	-	2.1 x 1.6	11.9	31.0	32.1	-
2781	09.1	-14 36	Sb <sup>+</sup> II-III	--	-	-	3.2 x 1.3	12.7	30.7	--	-
2782	10.9	+40 19	Sbnt or Sbnp	F0:	g	-	- x 1.6	12.5	--	32.0	*
2784	10.1	-23 58	E8	--	k	-	3.0 x 1.1	11.8	--	28.2:	-
2787	14.9	+69 25	Sap:	G5	k	-	2.0 x 1.3	12.0	--	29.3	-
2793	13.7	+34 39	Scp	--	af	-	0.8 x 0.8	12.9	--	--	-

NGC	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	$C_0$	Diameter	$m_{pg}$	$m-M_0(M)$	$m-M_0(V)$	N
2798	$9^h 14^m 4$	$+42^\circ 10'$	S(nn?)t	F5:	-	-	$2.3 \times 0.6$	13.1	--	31.2	-
2811	13.9	-16 06	Sb <sup>+</sup> II-III	G3	-	-	$1.6 \times 0.5$	12.4	30.4	31.8	-
2815	14.1	-23 24	Sbp III: or N	--	-	-	$3.0 \times 0.7$	12.9	--	--	-
2832	16.8	+33 59	Et	G0	-	-	--	13.5	--	34.2	*
2835	15.7	-22 08	Sp	--	-	-	$5.8 \times 2.8$	12.0:	--	29.0	*
2841	18.6	+51 12	Sb <sup>-</sup> I	G0	k	0.64	$6.4 \times 2.4$	10.10	30.2	29.2	-
2844	18.6	+40 22	Sa	--	g	--	$0.9 \times 0.5$	13.0	--	--	-
2848	17.8	-16 18	S <sup>-</sup> IV:	--	-	-	$2.1 \times 1.4$	12.8	29.5:	--	-
2855	19.1	-11 41	E1 or Sa	G3	-	-	$1.1 \times 1.0$	12.6	--	31.1	-
2859	21.3	+34 44	SBa	G3	k	-	$4.4 \times 3.5$	12.0	--	31.1	-
2865	21.2	-22 58	E4	G2	-	-	$0.8 \times 0.5$	12.5	--	31.9	-
2860	25.7	+62 44	E3	G4	k	-	$1.0 \times 0.7$	12.6	--	31.0	-
2889	24.8	-11 25	Sb <sup>+</sup> (tr?) I-II:	--	-	-	$1.3 \times 1.2$	12.4	31.8:	--	-
2902	28.5	-14 30	E0	--	-	-	$0.5 \times 0.5$	13.1	--	--	-
2903	29.3	+21 44	Sb <sup>+</sup> I-II	F0	f	0.39	$11.0 \times 4.6$	9.48	29.0	28.6:	-
2907	29.3	-16 32	Sb <sup>-</sup>	--	-	-	$1.0 \times 0.8$	12.9	--	--	-
2911	31.0	+10 22	E2p	F8	-	-	$0.6 \times 0.5$	13.6	--	32.4	-
2924	32.8	-16 11	E0	--	-	-	$0.5 \times 0.5$	13.2	--	--	-
2935	34.5	-20 54	S(B)b <sup>-</sup> I	--	-	-	$3.2 \times 2.4$	12.4	32.2	--	-
2942	36.2	+34 14	Sb II:	--	af	--	$1.5 \times 1.2$	12.9	32.0:	--	-
2950	39.1	+59 05	Sap	G2	k	--	$1.3 \times 0.9$	11.9	--	30.8	-
2955	38.3	+36 07	Sb II	--	fg	--	$1.2 \times 0.6$	13.1	32.2	--	-
2962	38.3	+05 24	Sb <sup>+</sup> III	--	g	--	$2.1 \times 1.5$	12.9	30.5	--	-
2964	40.0	+32 05	Scn II:	F5:	-	0.43	$2.2 \times 1.1$	11.89	31.0:	30.5	-
2967	39.5	+00 34	Sc* III:	--	-	-	$2.2 \times 2.0$	12.4	30.3:	31.6	-
2968	40.3	+32 10	Pec	--	-	0.93	$1.2 \times 0.8$	12.79	--	--	-
2974	40.0	-03 29	Sa	G5	-	--	$1.5 \times 0.9$	11.9	--	31.3	-
2976	43.2	+68 08	SD	--	a	0.55	$3.5 \times 1.3$	10.73	--	26.53	-
2983	41.3	-20 15	SBa	G5	-	--	$1.8 \times 1.0$	12.6	--	31.2	-
2985	46.0	+72 31	Sb <sup>-</sup> I	G3	fg	0.53	$5.5 \times 5.0$	11.11	31.1	30.8	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	m- $M_0$ (M)	m- $M_0$ (V)	N
2986	9 <sup>h</sup> 42 <sup>m</sup> 0	-21° 03'	E1	G7	-	-	1.0 x 0.9	12.2	--	31.6	-
2989	43.1	-18 09	Sb <sup>+</sup> II	--	-	--	1.0 x 0.7	13.1	32.0	--	-
2990	43.6	+05 57	SD <sup>+</sup>	--	a	--	1.0 x 0.5	13.0	--	--	-
2992	43.3	-14 06	Pectt	--	-	--	-	13.0	--	--	-
2993	43.4	-14 08	Pectt	--	-	--	-	13.0	--	--	*
2998	45.8	+44 19	Sc II	--	f	--	3.9 x 1.1	12.8	31.9	--	-
3003	45.6	+33 39	S(H)c III-IV:	F0	a:	0.22	6.0 x 0.9	12.04	29.7:	30.8	-
3021	48.0	+33 47	Sb	--	af	--	1.1 x 0.5	12.7	--	--	-
3031	51.5	+69 18	Sb I-II	G3	k	0.76	21.0: x 9.8	7.85	27.4	26.53	-
3032	49.2	+29 28	Sa	G2	g:	--	0.9 x 0.7	12.8	--	30.9	-
3034	51.9	+69 56	Pec	A5	a	0.72	9.0: x 4.0:	9.20	--	26.53	-
3041	50.3	+16 55	Sc II-III:	--	af	--	2.7 x 1.5	12.7	31.3:	--	-
3043	52.8	+59 32	SD <sup>+</sup> :	--	-	--	1.1 x 0.4	13.2	--	--	-
3044	51.0	+01 49	Sc:	--	a	--	4.6 x 0.5	12.6	--	--	-
3052	52.0	-18 24	Sc II	--	-	--	1.7 x 1.1	12.8	31.7	--	-
3054	52.1	-25 28	Sb II-III:	--	-	--	3.3 x 1.3	12.6	30.6:	--	-
3055	52.7	+04 31	Sc II:	--	af	--	1.7 x 1.0	12.6	31.6:	31.2	-
3065	57.7	+72 25	Sa	--	f:	--	0.5 x 0.5	12.9	--	31.7	-
3067	55.4	+32 37	Sb <sup>+</sup> III	F2	a?	--	1.8 x 0.5	12.6	30.3	30.8	-
3077	59.4	+68 58	E2p	--	-	0.59	2.3 x 1.9	10.57	--	26.53	*
3078	56.2	-26 41	E3	G0	-	--	0.6 x 0.4	12.1	--	31.7	-
3079	58.6	+55 57	Sb <sup>+</sup> (t) II:	--	fg	0.43	-	11.10	30.2:	30.5	-
3081	56.8	-22 33	Sb III:	--	-	--	1.1 x 0.8	12.8	30.2:	--	-
3091	57.8	-19 23	E2	--	-	--	1.0 x 0.8	12.7	--	--	-
3098	59.5	+24 58	E7	--	k	-4-	1.4 x 0.4	13.0	--	--	-
3109	10 <sup>h</sup> 00.8	-25 55	Ir <sup>-</sup> IV-V	--	-	--	12: x 2.0	11.2:	26.7:	26.1:	-
3115	02.8 <sup>h</sup>	-07 28	E6	G5	k	--	4.0: x 1.2	10.2	--	28.1:	-
3124	04.2	-19 00	S(B)b <sup>+</sup> I:	--	-	--	3.0 x 2.1	12.8	32.7:	--	-
3145	07.7	-12 10	Sb <sup>+</sup> I	--	-	--	2.4 x 1.0	12.5	32.5	32.8	-
3147	12.8	+73 39	Sb I-II:	G7	fg	--	3.0 x 2.3	11.3	30.8:	32.3	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
3156	10 <sup>h</sup> 10 <sup>m</sup> .1	+03° 22'	E5(p?)	--	-	--	1.0 x 0.5	13.1	--	--	--
3158	10.9	+39 00	E2	G3	-	--	0.6 x 0.5	13.1	--	34.2	--
3162	10.7	+22 59	Sc II:	F5	f	--	2.3 x 2.1	12.3	31.4:	30.45	--
3166	11.2	+03 40	Snn	G1	g	0.71	4.4 x 1.7	11.49	--	30.4	--
3169	11.7	+03 43	Sbnt	G5	gk	0.62	--	11.24	--	30.2	--
3177	13.9	+21 22	Sb <sup>+</sup> II-III	F8	g	--	0.8 x 0.7	12.8	31.1	30.45	--
3184	15.2	+41 40	Sc II	F3	af	0.37	5.6 x 5.6	10.28	29.4	28.1:	--
3185	14.9	+21 56	S(B)b <sup>+</sup> III:	F5	f	0.63	1.4 x 0.9	12.90	30.6:	30.45	--
3190	15.4	+22 05	Sbnt II-III:	G3	gk	0.79	--	11.96	30.3:	30.45	--
3193	15.7	+22 09	E0: I	G1	k	0.74	0.9 x 0.9	11.83	--	30.45	--
3198	16.7	+45 49	Sc II	--	af	0.32	9.0 x 3.2	10.82	29.9	29.1	--
3200	16.2	-17 44	Sb II	--	--	--	4.2 x 0.9	12.8	31.8	--	--
3203	16.3	-26 27	E8	--	--	--	2.0 x 0.3	13.2	--	--	--
3226	20.7	+20 09	E2	G2	--	--	1.0 x 0.8	12.6	--	30.5	--
3227	20.7	+20 07	Sbnt	F3:	--	--	--	11.3	--	30.0	*
3245	24.5	+28 46	E5	G2	-	--	1.8 x 0.9	11.8	--	30.4	--
3254	26.5	+29 45	Sb II	G4	fg	--	4.4 x 1.0	12.1	31.2	30.3	--
3259	29.2	+65 18	Ir <sup>+</sup> p IV:	--	g	--	1.3 x 0.7	12.9	29.9:	31.5	--
3274	29.6	+27 56	Sc*	--	--	--	2.0 x 0.7	13.0	--	--	--
3277	30.2	+28 46	Sb <sup>-</sup> II:	F5	g	--	1.1 x 0.9	12.4	31.5:	30.7	--
3285	31.3	-27 12	Snn	--	--	--	1.3 x 0.8	13.2	--	--	--
3287	32.1	+21 55	S* IV?	--	a	--	--	12.8	--	--	--
3294	33.4	+37 35	Sc I	--	af	--	2.6 x 1.2	11.6	31.3	30.8	--
3300	34.0	+14 26	SBa	--	--	--	1.0 x 0.5	13.1	--	--	--
3301	34.3	+22 08	Sa	G2	gk	--	2.5 x 0.6	12.2	--	30.5	--
3309	34.3	-27 16	E0	--	--	--	0.5 x 0.5	12.7	--	--	--
3310	35.7	+53 46	Ir II	A8:	g?	--	4.0 x 3.0:	11.3	30.4	30.2	--
3312	34.8	-27 20	Sn	--	--	--	2.4 x 0.9	13.1	--	--	--
3319	36.4	+41 56	S(B)c II	--	af	0.22	6.2 x 3.2	11.67	30.8	29.6	--
3320	36.7	+47 40	Sc III-IV	--	af	--	1.8 x 0.8	12.9	30.6:	--	--



NGC	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	$C_0$	Diameter	m <sub>pg</sub>	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
3329	$10^h 40^m 6^s$	+77°05'	SD;†	--	gk	--	1.2 x 0.6	12.9	--	--	--
3338	39.5	+14 00	Sb† II	--	f	0.32	4.5 x 3.0	11.25	30.3	30.4	--
3344	40.7	+25 11	Sc II	F5	f	0.24	7.6 x 6.2	10.38	29.5	28.5:	--
3346	41.0	+15 09	Sc II	--	af	--	2.2 x 2.0	12.4	31.5	--	--
3348	43.5	+73 07	E1	G5	k	--	0.9 x 0.8	12.0	--	32.4	--
3351	41.3	+11 58	S(B)b II	F5	fg	0.65	6.1 x 3.9	10.48	29.6	29.15	--
3353	42.3	+56 14	SD?	--	--	--	0.8 x 0.5	13.0	--	--	--
3359	43.4	+63 30	S(B)c II	--	a	0.30	7.0 x 3.5:	10.89	30.0	30.2	--
3367	44.0	+14 01	Sc I	F5	af	--	1.9 x 1.7	11.9	31.6	32.2	--
3368	44.2	+12 05	Sbp	G0	gk	0.69	5.0 x 4.0:	10.05	--	29.15	*
3370	44.5	+17 32	Sc III	--	f	--	2.4 x 1.2	12.4	30.4	30.6	--
3377	45.1	+14 15	E5	G2	k	--	1.9 x 1.0	11.3	--	29.15	--
3379	45.2	+12 51	E1	G7	k	--	2.2 x 2.0	10.5	--	29.15	--
3384	45.7	+12 54	E7	G5	k?	--	4.4 x 1.4	10.9	--	29.15	--
3389	45.8	+12 48	Sc* III:	--	a	--	2.3 x 1.0	12.1	30.1:	30.4	--
3395	47.1	+33 15	Sct	--	a	--	1.5 x 0.9	12.4	--	31.2	--
3396	47.2	+33 16	Pec(t)	--	a	--	--	12.8	--	31.0	--
3403	50.1	+73 57	Sb† III or Ir† IV?	--	--	--	--	12.9	--	30.7	--
3412	48.3	+13 41	E5	G0	gk	--	2.4 x 1.1	11.5	--	29.15	--
3414	48.6	+28 15	SBa or E	G5	k	--	1.4 x 1.0	12.0	--	30.7	--
3415	48.9	+43 59	E4	--	--	--	0.8 x 0.5	13.1	--	--	--
3423	48.7	+06 07	Sc II	--	af	0.22	3.5 x 2.8	11.48	30.6	--	--
3430	49.5	+33 14	Sc II:	--	af	--	3.4 x 2.0	12.0	31.1:	31.2	--
3432	49.7	+36 54	St	--	a	0.24	5.8 x 0.8	11.59	--	28.8:	--
3433	49.4	+10 26	Sb I:	--	f	--	2.5 x 2.2	12.9	33.0:	--	--
3437	49.9	+23 11	Sb	--	af	--	2.1 x 0.5	12.6	--	--	--
3445	51.6	+57 15	Sc*†	--	a	--	1.1 x 1.1	12.9	--	--	--
3448	51.7	+54 34	Snt	--	a?	--	--	12.6	--	--	--
3455	51.8	+17 33	Sb(nt)	--	af	--	2.4 x 1.0:	13.1	--	--	--
3458	53.0	+57 22	SD:	--	--	--	0.8 x 0.6	13.0	--	--	--

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	$m_{pg}$	$m-M_0(M)$	$m-M_0(V)$	N
3464	10 <sup>h</sup> 52 <sup>m</sup> 2	-20°49'	Sb II-III	--	-	--	2.6 x 1.4	13.2	31.4	--	--
3478	56.5	+46 23	Sb <sup>+</sup> I-II	--	-	--	2.2 x 0.8	13.2	32.8	--	--
3485	57.4	+15 06	S(B) <sup>b</sup> II;	--	af	--	1.5:x 1.1;	12.8	31.9:	--	--
3486	57.8	+29 15	Sc II	G3	fg	0.32	6.8 x 4.5	11.00	30.1	30.1	--
3489	57.7	+14 10	E6	G0	gk	--	2.0 x 0.9	11.3	--	28.8:	--
3495	58.6	+03 53	Sb II:	--	af	--	4.0 x 0.8	12.7	31.8:	--	--
3504	11 <sup>h</sup> 00.5	+28 15	Sb(tp)	F3:	fg/g:	--	2.2 x 2.2	11.6	--	30.8	--
3506	00.6	+11 21	Sc*	--	f	--	0.8 x 0.7	13.2	--	--	--
3510	01.0	+29 09	St	--	a	--	3.5 x 0.4	12.8	--	29.1	--
3511	00.8	-22 50	Sc* II:	--	a	--	4.6 x 2.0	11.9	30.9:	--	--
3512	01.3	+28 18	Sc III	--	f	--	1.2 x 1.0	12.9	30.9	30.8	--
3513	01.1	-22 58	S(B)c* II:	--	af	--	1.9 x 1.3	12.0	31.0:	--	--
3516	03.4	+72 50	E or Sa	F0	-	--	0.8 x 0.6	12.5	--	32.2	*
3521	03.2	+00 14	Sb <sup>+</sup> II	G3	f	0.76	7.0:x 4.0:	10.06	29.2	28.9:	--
3547	07.3	+11 00	SD?	--	af	--	1.1 x 0.8	12.9	--	--	--
3549	08.2	+53 39	Sb II-III	--	af	--	2.6 x 0.9	12.8	31.1	--	--
3556	08.7	+55 57	Sc*	F0:	a	0.38	7.7 x 1.3	10.57	--	29.3	--
3571	08.9	+18 01	Sa	--	-	--	2.6 x 1.0	13.1	--	--	--
3583	11.4	+48 39	Sc II	--	fg	--	2.2 x 1.4	12.2	31.3	--	--
3585	10.9	-26 29	E5	G3	k	--	2.0 x 1.0	11.0	--	30.5	--
3593	12.0	+13 06	Sb III	F5	g:	--	2.5:x 0.9	11.6	29.3	28.87	--
3596	12.4	+15 04	Sc* II	--	f	--	3.6 x 2.8	12.2	31.3	--	--
3605	14.2	+18 18	E3	G3	-	--	0.7 x 0.5	14.0	--	28.9:	--
3607	14.3	+18 20	E1	G3	gk:	--	1.7 x 1.5	11.0	--	29.6	--
3608	14.4	+18 26	E3	G0	k	--	1.4 x 1.0	12.1	--	30.2	--
3610	15.6	+59 04	E2p	G2	k	--	1.3 x 1.0	11.6	--	31.36	--
3611	14.9	+04 50	Sa	F5	gk?	--	1.5 x 1.1	12.8	--	31.0	--
3613	15.7	+58 17	E5	G3	-	--	1.6 x 0.8	11.7	--	31.36	--
3614	15.6	+46 02	Sc I	--	af	--	4.3 x 1.8	12.9	32.0	--	--
3619	16.5	+58 02	Snn:	G3	-	--	--	12.7	--	31.36	--

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	m <sub>pg</sub>	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
3623	11h16 <sup>m</sup> 3	+13°23'	Sbn II:	G0	g	0.74	7.8 x 1.5	10.18	29.3:	28.87	-
3626	17.5	+18 38	Sb <sup>+</sup> n II:	G0	gk	-	1.6 x 1.1	11.0	30.1:	30.7	-
3627	17.6	+13 17	Sb <sup>+</sup> n* II:	G2	fg	0.56	-	9.65	28.8:	28.87	-
3628	17.7	+13 53	Sbnt	-	g:	0.63	-	10.23	-	28.87	-
3629	17.9	+27 15	Sen* III:	-	af	-	1.8 x 1.1	12.9	31.0:	-	-
3630	17.7	+03 15	E7	-	-	-	1.5 x 0.5	12.8	-	-	-
3631	18.3	+53 28	Sc I	-	f	0.39	4.3 x 3.2	10.91	30.6	30.3	-
3637	18.1	-09 58	S(B)a:	-	-	-	1.1 x 1.0	12.8	-	-	-
3640	18.5	+03 31	E1	G4	k	-	1.1 x 1.0	11.6	-	30.4	-
3642	19.6	+59 21	Sc(n) I	G0	fg/g	0.28	5.7 x 4.4	11.52	31.2	31.36	-
3646	19.2	+20 27	Sc I	-	af	0.48	3.2 x 1.9	11.82	31.6	33.2	-
3655	20.3	+16 51	SD?	-	af	-	1.2 x 0.9	12.3	-	-	-
3659	21.1	+18 05	SD:	-	a?	-	1.1 x 0.5	12.9	-	-	-
3664	21.7	+03 35	S(B) IV-V:	-	a	-	1.3 x 1.3	12.9	28.7:	-	-
3665	22.1	+39 02	E2	G1	k	-	1.6 x 1.2	11.9	-	31.5	-
3666	21.9	+11 37	Sb,III	-	af	-	3.7 x 0.8	12.6	30.3	-	-
3672	22.5	-09 32	Sb <sup>+</sup> II	-	a	-	3.6 x 1.3	11.8	30.9	31.3	-
3673	22.8	-26 28	S(B)b II	-	-	-	2.9 x 2.3	12.9	31.9	-	-
3675	23.5	+43 52	Sb <sup>-</sup> II	G2	g	-	4.0 x 1.7	11.0	30.1	29.3	-
3681	23.9	+17 09	Snn	G3	g	-	1.0 x 0.9	12.5	-	30.4	-
3683	24.8	+57 09	SD:	-	af:	-	1.3 x 0.5	13.2	-	-	-
3684	24.5	+17 18	Sen III	F0	f	-	2.8 x 1.8	12.3	30.3	30.6	-
3686	25.1	+17 30	Sc(n*) II	F3:	-	-	2.4 x 1.8	11.7	30.8	29.8	-
3687	25.3	+29 47	Sb <sup>+</sup> II-III:	-	-	-	1.3 x 1.3	13.0	31.4:	-	-
3689	25.5	+25 56	Sc II:	-	af	-	1.0 x 0.8	12.8	32.0:	-	-
3690	26.0	+58 49	St + ?t	-	a	-	0.9 x 0.7	12.1	-	-	*
3691	25.5	+17 11	SD	-	-	-	3.5 x 1.2	13.1	-	-	-
3705	27.6	+09 33	Sb II-III	-	-	-	-	12.2	30.5	-	-
3718	29.9	+53 21	Snnt	G0	f?	0.54	-	11.24	-	30.2	-
3720	29.8	+01 05	E0	-	-	-	0.5 x 0.5	13.0	-	-	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
3726	11 <sup>h</sup> 30 <sup>m</sup> 7	+47°19'	Sc(*) I-II	A8	af	0.30	5.7 x 3.4	10.84	30.3	30.0	-
3729	31.0	+53 24	Pec	---	-	0.40	1.8 x 1.3	11.88	---	---	-
3732	31.7	-09 34	E0	---	-	---	0.6 x 0.6	12.9	---	---	-
3735	33.1	+70 48	Sb II:	---	f	---	3.8 x 0.5	12.6	31.7:	---	-
3738	33.1	+54 48	Pec	---	a?	0.19	1.3 x 1.1	12.00	---	---	-
3756	34.1	+54 34	Sc II	---	af	0.44	3.3 x 1.6	12.05	31.2	---	-
3769	35.1	+48 11	Sbn	---	f	---	2.5 x 0.6	12.5	---	---	-
3773	35.6	+12 23	E0p	---	-	---	0.5 x 0.5	13.0	---	---	-
3780	36.7	+56 33	Sc II	---	af	---	2.4 x 1.9	12.6	31.7	---	-
3782	36.9	+46 44	Scp or SD	---	a	---	1.2 x 0.7	12.9	---	---	-
3810	38.4	+11 45	Sc I	G0	f	0.42	3.6 x 2.5	11.30	31.0	29.7	-
3813	38.7	+36 49	SD	---	a	---	1.7 x 0.8	12.6	---	---	-
3818	39.4	-05 53	E2(p?)	G5	---	---	0.8 x 0.6	13.0	---	30.6	-
3865	42.7	-08 56	Sbn	---	-	---	1.6 x 1.0	13.0	---	---	-
3872	43.2	+14 03	E4	G1	-	---	0.8 x 0.5	13.0	---	32.4	-
3877	43.5	+47 46	Sbn	---	af	---	4.4 x 0.8	12.0	---	---	-
3887	44.6	-16 35	Sc* II-III:	---	f	---	2.8 x 2.2	11.6	30.2:	29.9	-
3888	45.0	+56 15	Sb II-III:	---	f	---	1.3 x 0.9	13.0	31.3:	---	-
3892	45.5	-10 41	S(B)a:	---	-	---	1.3 x 1.0	12.9	---	---	-
3893	46.1	+49 00	Scn I:	F2:	-	---	3.7 x 1.9	11.1	30.8:	30.0	-
3898	46.7	+56 22	Sb <sup>-</sup> II	G5	k	---	2.6 x 1.0	11.7	30.8	30.3	-
3900	46.6	+27 17	Sb <sup>+</sup> III	G1	g	---	1.7 x 0.8	12.4	30.2	31.1	-
3912	47.5	+26 46	Sb <sup>+</sup> III?	---	-	---	0.9 x 0.5	13.0	---	---	-
3917	48.3	+52 06	S(n*)	---	af	---	4.4 x 0.7	12.8	---	---	-
3936	49.9	-26 37	Sb III	---	-	---	3.3 x 0.3	13.0	30.6	---	-
3938	50.2	+44 24	Sc I	---	fg	0.31	4.5 x 3.8	10.79	30.5	29.8	-
3941	50.3	+37 16	E3	G7	k:	---	1.8 x 1.2	11.3	---	29.9	-
3945	50.6	+60 57	SBa	G3	gk:	---	5.2 x 2.2	11.7	---	30.6	-
3949	51.1	+48 08	Sbn	G0	f	---	2.3 x 1.1	11.4	---	29.4	-
3952	51.1	-03 43	Pec	---	-	---	1.0 x 0.4	13.0	---	---	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	$m-M_0$ (M)	$m-M_0$ (V)	N
3953	11 <sup>h</sup> 51 <sup>m</sup> 2	+32°37'	Sb <sup>+</sup> I or S(B)b <sup>+</sup> I	G3	f	0.50	5.6 x 2.3	10.71	30.8	30.1	-
3955	51.5	-22 54	Sb III	---	---	---	2.1 x 0.4	12.8	30.4	---	-
3956	51.6	-20 18	S- IV:	---	---	---	3.2 x 0.5	12.6	29.5:	---	-
3957	51.6	-19 17	E8	---	---	---	2.5 x 0.5	12.9	---	---	-
3962	52.2	-13 42	E2	G2	-	---	1.1 x 0.9	11.9	---	31.0	-
3963	52.4	+58.46	Sc I-II	---	af	---	2.1 x 1.9	12.7	32.1	---	-
3976	53.4	+07 02	Sb II	---	g	---	3.3 x 0.8	12.4	31.5	---	-
3981	53.7	-19 37	Sbt	---	---	---	3.8 x 1.3	12.7	---	---	-
3982	53.9	+55 24	Sbn	---	f	---	1.7 x 1.3	11.8	---	---	-
3985	54.1	+48 37	SD:	---	f/g?	---	0.9 x 0.6	12.9	---	---	-
3992	55.0	+53 39	S(B)b <sup>+</sup> I	G4	f	0.63	6.2 x 3.5	10.62	30.8	30.3	-
3995	55.2	+32 35	Set	---	af	---	2.1 x 0.6	12.9	---	32.6	-
3998	55.3	+55 44	E2(p?)	G1	k	---	1.6 x 1.2	11.6	---	30.4	-
4008	55.7	+28 28	Sa	---	k	---	0.7 x 0.5	12.9	---	---	-
4013	56.0	+44 13	Sb	---	gk:	---	4.4 x 0.5	12.7:	---	---	-
4024	56.0	-18 05	E2	---	---	---	0.9 x 0.7	12.9	---	---	-
4026	56.9	+51 14	E8	G5	k	---	3.6 x 0.7	11.7	---	29.9	-
4027	57.0	-18 59	Set	---	af	---	2.4 x 2.0	11.6	---	---	-
4030	57.8	-00 49	Sc I	---	f	---	3.1 x 2.2	11.2	30.9	30.7	-
4032	58.0	+20 21	Ir III:	---	---	---	1.1 x 1.0	13.0	31.0:	---	-
4033	58.0	-17 34	E5	---	---	---	1.0 x 0.5	12.8	---	---	-
4036	58.9	+62 10	E6	G2	k	0.71	2.4 x 0.9	11.48	---	30.9	-
4037	58.8	+13 41	S(B) IV?	---	---	---	1.5 x 1.1	12.8	---	---	-
4038	59.3	-18 35	Sett	F0	af	---	---	10.9	---	30.8	*
4041	59.7	+62 25	Sc(*) II	---	g	0.32	2.4 x 1.8	11.48	30.6	---	-
4045	12 <sup>h</sup> 00.2	+02 15	S(t?)p	---	f	---	---	12.8	---	---	-
4047	00.2	+48 55	Sb <sup>+</sup> III:	---	g	---	1.1 x 1.0	12.9	30.5:	---	-
4050	00.4	-16 06	S(B)b <sup>-</sup> II:	---	---	---	2.5 x 1.3	12.5	31.6:	---	-
4051	00.6	+14 48	Sc(*) II	A5:	f?	0.55	4.5 x 3.6	10.81	30.0	29.2	*
4062	01.5	+32 10	Sb II:	---	---	---	3.4 x 1.1	12.1	31.3:	---	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	$m_{pg}$	$m-M_0(M)$	$m-M_0(V)$	N
4064	12 <sup>h</sup> 01 <sup>m</sup> 06	+18°43'	Sb <sup>-</sup> III	--	af/f	--	2.0: x 0.9	12.8	30.6	29.9	--
4073	01.9	+02 11	E1	--	--	--	0.7 x 0.6	13.2	--	--	--
4085	02.8	+50 38	Sb III:	--	--	0.38	2.2 x 0.5	12.79	30.5:	--	--
4088	03.0	+50 49	Sc* I-II:	--	a:	0.38	4.5 x 1.4	11.03	30.5:	29.6	--
4094	03.3	-14 16	S- IV	--	--	--	3.5 x 1.0	13.0	30.0	--	--
4096	03.5	+47 45	Sc* II:	--	af	0.22	5.7 x 1.0	10.88	30.0:	--	--
4100	03.6	+49 51	Sbn I-II:	--	af	--	5.0 x 1.2	11.9	31.5:	--	--
4102	03.8	+52 59	Sc*t	F8	g	--	2.2 x 1.0	12.3	--	30.0	--
4111	04.5	+43 21	E8	G3	k	0.66	3.3 x 0.6	11.63	--	29.7	--
4116	05.1	+02 58	Spc III:	--	af	0.23	3.1 x 1.2	12.29	30.3:	30.28	--
4123	05.6	+03 09	Snb III	--	af	0.30	3.2 x 2.0	11.79	29.5	30.28	--
4124	05.6	+10 40	Sa:	--	fg	--	3.3 x 0.9	12.5	--	30.28	--
4125	05.7	+65 27	E5p	G5	k	--	2.2 x 1.1	11.0	--	30.9	--
4128	06.1	+69 03	Sa:	--	k	--	1.6 x 0.4	12.9	--	32.0	--
4129	06.3	-08 45	SD?	--	--	--	2.2 x 0.3	12.9	--	--	--
4136	06.7	+30 12	Sc(n) III	F8	--	--	3.4 x 2.8	12.1	30.2	28.2:	--
4138	07.0	+43 58	E4	G2	g	--	1.3 x 0.8	12.3	--	30.2	--
4143	07.1	+42 49	E4	G5	k	--	1.4 x 0.9	12.1	--	29.6	--
4144	07.5	+46 44	Sb III to S- IV	--	af	--	5.2 x 0.7	12.4	29.8	--	--
4145	07.5	+40 10	Sc* II	--	--	--	5.4 x 3.1	12.2	31.4	--	--
4150	08.0	+30 41	E2	G2	--	--	1.2 x 0.9	12.6	--	28.20	--
4151	08.0	+39 41	Pcc	A8:	gk	--	--	11.3	--	30.0	*
4152	08.1	+16 19	Sc(n?) II-III:	--	f	--	1.7 x 1.3	12.7	31.4:	30.28	--
4157	08.6	+50 46	Sb* II:	--	fg	--	6.5 x 0.8	12.0	31.1:	--	--
4158	08.6	+20 27	Sa	--	fg	--	0.9 x 0.8	12.9	--	--	--
4160	09.1	+44 01	S- IV:	--	--	--	4.4 x 0.4	12.6	29.6:	--	--
4162	09.4	+24 24	Sc II	--	f	--	2.0 x 1.0	12.6	31.8	32.0	--
4168	09.8	+13 29	E0	--	--	0.87	1.0 x 1.0	12.32	--	30.28	--
4178	10.2	+11 09	Sbc II:	--	af	0.27	4.4 x 1.1	11.75	30.9:	30.28	--
4179	10.3	+01 35	E8	F8	k	--	2.7 x 0.6	11.7	--	30.28	--

NGC	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	$C_0$	Diameter	m <sub>pg</sub>	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
4189	12 <sup>h</sup> 11 <sup>m</sup> 2	+13°42'	Sc II:	--	-	0.60	1.7 x 1.5	12.51	31.7:	30.28	-
4190	11.1	+36 54	Ir	--	-	---	1.1 x 0.8	13.2	--	--	-
4192	11.3	+15 11	Sbt I-II:	G0	fg	0.63	8.4 x 1.9	10.89	30.5:	30.28	-
4203	12.5	+33 29	Ep	G3	k	---	1.8 x 1.5	11.5	--	30.0	-
4212	13.1	+14 11	Sc III	--	-	0.57	2.3 x 1.3	11.71	29.8	30.28	-
4214	13.1	+36 36	Ir <sup>+</sup> III-IV	Em	a	0.21	6.6 x 5.8:	10.12	27.9	28.20	-
4215	13.4	+06 41	Sb <sup>+</sup> III:	--	-	---	1.1 x 0.4	12.8	30.5:	30.28	-
4216	13.4	+13 25	Sb II	G3	g	0.88	7.4 x 0.9	10.88	30.0	30.28	-
4217	13.3	+47 22	Sb	G:	g:	---	4.5 x 0.9	11.9:	--	--	-
4220	13.7	+48 10	Sa:	G2	fg	---	2.6 x 0.8	12.2	--	30.1	-
4224	14.0	+07 44	Sa or Sb <sup>-</sup> III	--	-	0.97	1.5 x 0.6	12.89	--	30.28	-
4233	14.6	+07 54	E or Sa	--	-	0.95	1.0 x 0.4	13.03	--	30.28	-
4234	14.6	+03 58	Sb <sup>+</sup> IV	--	-	---	0.8 x 0.7	13.0	30.0	30.28	-
4235	14.6	+07 28	Sa <sup>+</sup> or Snn	--	fg/g	0.89	2.6 x 0.5	12.58	--	30.28	-
4236	14.3	+69 45	Sb <sup>+</sup> IV or Ir <sup>+</sup> IV	--	a	0.13	20.0 x 5.0	10.03	27.0	26.53	-
4237	14.7	+15 36	SD	--	-	---	1.3 x 0.8	12.6	--	30.28	-
4242	14.9	+45 54	S <sup>-</sup> IV	--	af	0.31	3.6 x 3.0	11.39	28.4	28.20	-
4244	15.0	+38 05	S <sup>-</sup> IV:	--	af:	0.22	14.5 x 1.0	10.48	27.5:	28.20	-
4245	15.2	+29 53	S(b)b <sup>+</sup> III	G0	g	---	1.5 x 1.0	12.4	30.2	29.58	-
4251	15.7	+28 27	E7 or Sa	G3	-	---	2.3 x 0.8	11.6	--	29.58	-
4254	16.3	+14 42	Sc I	G2	f	0.41	4.6 x 3.9	10.37	30.1	30.28	-
4256	16.4	+66 01	Sb:	--	gk	---	4.0 x 0.5	13.0	--	32.2	-
4258	16.5	+47 35	Sb <sup>+</sup> (t?)p	G0:	g	0.46	19.5 x 7.0:	8.90	--	28.20	*
4260	16.8	+06 23	Sb <sup>-</sup> III:	--	gk	---	2.0 x 0.9	12.7	30.4:	30.28	-
4261	16.8	+06 06	E2	G7	k	---	0.9 x 0.7	11.7	--	30.28	-
4262	17.0	+15 09	E1	--	-	---	0.9 x 0.8	12.6	--	30.28	-
4267	17.2	+13 03	E2 or Sa	G3	-	---	-	12.0	--	30.28	-
4270	17.3	+05 44	Sa	G5	-	0.83	1.2 x 0.4	13.13	--	30.28	-
4273	17.4	+05 37	Sc* <sup>+</sup> III:	F5:	f	0.44	1.5 x 1.0	12.35	30.4:	30.28	-
4274	17.4	+29 53	Sb <sup>+</sup> I-II-III	G3	k	0.79	6.7 x 1.3	11.33	29.7	29.58	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
4278	12 <sup>h</sup> 17 <sup>m</sup> 7	+29°34'	E1	G5	k	0.71	1.4 x 1.3	11.20	--	29.58	-
4281	17.8	+05 40	E5	G3	-	0.89	1.1 x 0.6	12.32	--	30.28	-
4283	17.9	+29 35	E0	G8	k	0.75	0.7 x 0.7	13.27	--	29.58	-
4290	18.5	+58 22	SbB(n?) II	--	f	--	1.6 x 1.2	12.7	31.8	--	-
4291	18.1	+75 40	E1	G3	k	--	0.8 x 0.7	12.4	--	31.5	-
4293	18.7	+18 40	Pec	--	fg:	--	4.6 x 1.6	11.7	--	30.28	-
4294	18.7	+11 47	S(B)c* III-IV:	--	-	0.32	2.4 x 0.9	12.46	30.2:	30.28	-
4298	19.0	+14 53	S**t	--	af	0.51	2.2 x 1.1	11.95	--	30.28	-
4299	19.2	+11 47	S* IV: or Ir <sup>+</sup> IV:	--	-	0.18	1.1 x 0.9	12.71	29.8:	30.28	-
4302	19.2	+14 53	Sc	--	f	0.74	4.7 x 0.5	12.44	--	30.28	-
4303	19.4	+04 45	Sc I	G1	f	0.30	5.6 x 5.3	10.01	29.8	30.28	-
4307	19.5	+09 20	Sb- II-III	--	-	--	2.8 x 0.4	13.0	31.4	30.28	-
4314	20.0	+30 10	SBa	G2	-	--	3.1 x 2.9	11.5	--	29.58	-
4321	20.4	+16 06	Sc I	F5	fG	0.56	5.3 x 4.5	10.07	29.8	30.28	-
4324	20.6	+05 31	Sb <sup>+</sup> III?	G5	gk	--	1.3 x 0.6	12.5	--	30.28	-
4339	21.0	+06 22	E0	G3	k	--	0.7 x 0.7	12.6	--	30.28	-
4340	21.0	+17 00	SBa	--	k	--	2.2 x 1.4	13.0	--	30.28	-
4342	21.1	+07 22	Sa:	--	k	0.82	2.1 x 0.3	13.48	--	30.28	*
4346	21.0	+47 16	E6	--	k	--	1.9 x 0.7	12.4	--	--	-
4348	21.3	-03 10	Sb II-III:	--	-	--	2.8 x 0.4	13.1	31.4:	--	-
4350	21.4	+16 58	E2	G5	gk	--	1.8 x 0.5	11.9	--	30.28	-
4365	22.0	+07 36	E7	G5	k	--	1.3 x 1.0	11.1	--	30.28	-
4369	22.1	+39 39	Sa	--	af:	--	1.4 x 1.3	12.4	--	30	-
4371	22.4	+11 59	SBa	--	-	0.86	2.2: x 1.2	11.83	--	30.28	-
4374	22.6	+13 10	E1	G5	-	0.79	1.6 x 1.4	10.21	--	30.28	-
4377	22.7	+15 02	E1	--	k	--	0.7 x 0.6	12.9	--	30.28	-
4378	22.8	+05 12	Snn	--	gk	--	3.0 x 2.7	12.8	--	30.28	-
4379	22.8	+15 53	E1	--	-	--	0.7 x 0.6	13.0	--	30.28	-
4380	22.9	+10 17	Snn	--	-	--	2.6 x 1.3	12.8	--	30.28	-
4382	22.8	+18 28	Ep or Et	G5	gk	0.72	2.1 x 1.7	10.05	--	30.28	-



NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	$m_{pg}$	$m-M_0(M)$	$m-M_0(V)$	N
4383	$12^h 23^m 0$	+16°45'	E:p	--	-	--	0.8 x 0.5	12.9	--	30.28	-
4385	23.1	+00 50	Sb <sup>-</sup> II-III	--	fg	--	1.1 x 0.9	12.9	31.2	30.28	-
4386	22.4	+75 48	Sa:	--	-	--	1.0 x 0.5	12.8	--	31.5	-
4388	23.3	+12 56	Sbn	--	-	0.61	5.0 x 0.9	11.73	--	30.28	-
4389	23.1	+45 58	Sb <sup>-</sup> IV?	--	af	--	1.7 x 0.9	12.8	--	--	-
4394	23.4	+18:29	Sb <sup>-</sup> II	G3	g	0.76	2.3 x 2.3	11.81	31.0	30.28	-
4395	23.1	+33 49	S <sup>+</sup> IV-V	--	a	0.31	10.0 x 8.0	10.66	26.5:	28.20	-
4406	23.7	+13 13	E3	G7	k	0.79	2.1 x 1.4	10.10	--	30.28	-
4412	24.0	+04 14	S(B)p	--	a	--	0.9 x 0.8	12.8	--	30.28	-
4414	24.0	+31 30	Scn* II:	G2	fg	--	3.2 x 1.5	10.9	30.1:	29.58	-
4417	24.3	+09 52	E7	--	-	0.72	1.8 x 0.5	12.11	--	30.28	-
4419	24.4	+15 19	Ep	--	-	--	2.2 x 0.6	12.2	--	30.28	-
4420	24.4	+02 46	Sc* III:	--	a	--	1.9 x 0.7	12.5	30.5:	30.28	-
4424	24.6	+09 42	Sbn III:	--	-	0.51	2.0 x 1.0	12.32	30.1:	30.28	-
4425	24.7	+13 01	Sb <sup>-</sup> III:	G2	-	0.82	2.0 x 0.5	12.84	30.6:	30.28	-
4428	24.9	-07 54	Sc* III:	--	-	--	1.5 x 0.6	13.1	31.1:	30.28	-
4429	24.9	+11 23	?	G3	fg	0.88	3.3 x 1.0	11.09	--	30.28	-
4433	25.0	-08 01	SD	--	-	--	1.5 x 0.6	12.9	--	30.28	-
4435	25.2	+13 21	E4	G5	k	0.77	1.3 x 0.8	11.86	--	30.28	-
4438	25.3	+13 17	Snn <sup>tt</sup>	G3	g?	0.66	- - -	10.92	--	30.28	-
4442	25.6	+10 05	E5p	G5	k	0.81	1.8 x 0.9	11.61	--	30.28	-
4448	25.8	+28 54	Sb <sup>-</sup> II-III	G2	g	--	2.8 x 1.0	11.7	30.1	29.58	-
4449	25.8	+44 22	Ir III	P0:	a	0.18	4.1 x 3.4	9.90	28.0	28.20	-
4450	25.9	+17 21	Sbn	G3	g	0.64	3.0 x 2.5	10.81	--	30.28	-
4452	26.2	+12 02	S	--	-	--	1.3 x 0.3	13.2	--	30.28	-
4454	26.3	-01 40	Sb <sup>+</sup> II-III:	--	-	--	1.3 x 1.1	12.8	31.1:	30.28	-
4455	26.2	+23 06	S <sup>+</sup> IV:	--	-	--	2.4 x 0.5	13.0	30.1:	--	-
4457	26.4	+03 51	S(B)a	--	g	--	2.4 x 2.0	11.7	--	30.28	-
4459	26.5	+14 15	E2	G3	-	--	1.2 x 1.0	11.5	--	30.28	-
4460	26.4	+45 08	F8	--	fg?	--	2.0 x 0.5	12.5	--	--	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	$m_{pg}$	$m-M_0$ (M)	$m-M_0$ (V)	N
4461	$12^h 26^m 6$	+13°28'	Sa	G5	gk	--	1.6 x 0.7	12.0	--	30.28	--
4462	26.7	-22 54	Sb III:	--	--	--	2.7 x 0.8	13.0	30.6:	--	--
4469	27.0	+09 02	Sp	--	fg:	--	2.9 x 0.8	12.5	--	30.28	--
4472	27.3	+08 16	E4	G7	k	0.78	2.8 x 1.8	9.33	--	30.28	--
4473	27.3	+13 42	E4	G7	k	--	1.6 x 0.9	11.3	--	30.28	--
4474	27.4	+14 21	E6	G3	--	--	1.3 x 0.5	12.7	--	30.28	--
4476	27.5	+12 37	E4 or Sa	--	--	--	0.7 x 0.4	13.4	--	30.28	--
4477	27.6	+13 55	S(B)a	G3	--	--	2.4 x 2.2	11.4	--	30.28	--
4478	27.8	+12 36	E1	G5	--	--	0.8 x 0.7	12.3	--	30.28	--
4483	28.2	+09 17	S(B)a?	--	--	--	0.8 x 0.5	13.3	--	30.28	--
4485	28.2	+41 58	Ir III-IV:	--	--	0.16	1.5 x 0.8	12.24	30.0:	--	--
4486	28.3	+12 40	E1	G5	k	0.76	1.9 x 1.8	9.56	--	30.28	--
4487	28.3	-07 48	Sc II-III	--	--	--	3.3 x 2.5	12.0	30.6	30.28	--
4490	28.3	+41 55	Scn* t III:	A5	af	0.22	5.6 x 2.1	10.09	28.1:	28.20	--
4494	28.9	+26 03	E1	G7	k	--	1.3 x 1.2	10.9	--	30.6	--
4496	29.1	+04 12	S(B)c III: + ?	--	a+a	0.40	3.3 x 2.7	11.93	30.0:	30.28	--
4501	29.5	+14 42	Sb <sup>+</sup> I	G5	fg	0.53	5.5 x 2.4	10.07	30.2	30.28	--
4503	29.6	+11 27	E:2	--	gk	--	0.8 x 0.6	12.8	--	30.28	--
4504	29.7	-07 17	Scn II-III:	--	--	--	5.8 x 1.8	12.3	30.9:	30.28	--
4517	29.0	+00 21	Sc	--	af	0.54	8.9 x 0.9	11.10	--	30.28	--
4519	31.0	+08 56	Sc III	--	af	0.32	2.2 x 1.7	12.22	30.3	30.28	--
4522	31.2	+09 27	Scp	--	--	--	2.5 x 0.5	12.9	--	30.28	--
4526	31.6	+07 58	E7	G4	g	--	3.3:x 1.0	10.6	--	30.28	--
4527	31.6	+02 56	Sb <sup>+</sup> (n) II	G2	g	0.71	5.3 x 1.0	11.29	30.4	30.28	--
4532	31.8	+06 44	Ir: III:	--	a?	0.17	2.2 x 0.5	12.17	30.2:	30.28	--
4535	31.8	+08 28	S(B)c I:	F0:	af	0.45	6.0 x 4.0	10.38	30.1:	30.28	--
4536	31.9	+02 28	Sc(t) II:	--	f	0.39	6.9 x 2.6	10.94	30.1:	30.28	--
4540	32.3	+15 50	Ir IV	--	af	--	1.0 x 0.8	12.9	30.0	30.28	--
4546	32.9	-03 31	E6	G3	gk	--	1.8 x 0.8	11.4	--	30.28	--
4548	32.9	+14 46	Sbbn	G5	g	0.48	3.7 x 3.2	10.86	--	30.28	--

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
4550	12h32m9	+12°30'	E7	G3	-	-	1.4 x 0.4	12.6	--	30.28	-
4552	33.1	+12 50	E0	G7	k	-	1.3 x 1.3	11.0	--	30.28	-
4559	33.5	+28 14	Sc II-III	--	a	0.23	11.0: x 4.5	10.26	28.9	29.7	-
4561	33.6	+19 36	Sc* III-IV:	--	af	-	1.0 x 1.0	12.9	30.7:	--	-
4564	34.0	+11 43	E6	--	-	0.78	1.6 x 0.6	12.17	--	30.28	-
4565	33.9	+26 16	Sb I:	G0	gk	0.68	14.4 x 1.2	10.30	30.5:	30.4	-
4567	34.0	+11 32	Sc**t	--	f	0.58	-	11.98	--	30.28	-
4568	34.1	+11 31	Sc**t	--	af	0.71	-	11.66	--	30.28	*
4569	34.3	+13 26	Sb <sup>+</sup> n	G0	f	0.43	7.5: x 2.2	10.11	--	30.28	-
4570	34.4	+07 31	E8	G7	k	-	2.4 x 0.5	11.8	--	30.28	-
4571	34.3	+14 28	Snn*	--	-	0.31	2.6 x 2.2	11.63	--	30.28	-
4578	35.0	+09 50	Sa	G0	-	-	1.9: x 1.3:	12.5:	--	30.28	-
4579	35.1	+12 05	Sbn	G3	gk	0.65	4.4 x 3.5	10.32	--	30.28	-
4580	35.3	+05 38	Sb <sup>+</sup> n III	--	-	-	1.3 x 1.0	12.8	30.5	30.28	-
4586	35.9	+04 35	Sb <sup>+</sup> III:	--	f	0.85	2.6 x 0.7	12.54	30.3	30.28	-
4589	35.6	+74 28	Sa or Ep	G5	k	-	1.0 x 0.8	12.1	--	31.5	-
4592	36.7	-00 16	Sb II-III	--	-	-	2.8 x 0.8	12.4	30.7	30.28	-
4593	37.0	-05 04	SBb <sup>-</sup> II	--	-	-	3.5 x 2.7	12.1	31.2	30.28	-
4594	37.3	-11 21	Sb <sup>-</sup>	G3	k	0.81	6.0 x 2.5	9.18	--	30.28	-
4595	37.3	+15 34	Sc* III:	--	-	-	1.1 x 0.8	13.1	31.2:	30.28	-
4596	37.4	+10 27	SBa	--	k	0.84	2.8: x 2.2:	11.41	--	30.28	-
4597	37.5	-05 32	SBc* III:	--	-	-	3.7 x 1.1	12.9	30.9:	30.28	-
4602	38.0	-04 52	Scn* II:	--	-	-	-	12.4	31.5:	30.28	-
4605	37.8	+61 53	SD	--	a?	-	5.0 x 1.2	10.9	--	26.53	-
4608	38.7	+10 26	SBA	--	k	0.80	1.4 x 1.4	12.02	--	30.28	-
4612	39.0	+07 35	Ep	--	k	-	0.9 x 0.8	12.6:	--	30.28	-
4618	39.2	+41 25	Sc*t	--	a	0.19	3.5 x 3.0	11.08	--	28.20	-
4621	39.5	+11 55	E3	G7	k	-	1.4 x 1.0	11.0	--	30.28	-
4623	39.6	+07 56	E:5	--	-	-	1.1 x 0.6	13.2	--	30.28	-
4630	40.0	+04 14	Pec.	--	-	-	1.1 x 0.8	13.1	--	30.28	-

NGC	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	$C_0$	Diameter	$m_{pg}$	$m-M_0(M)$	$m-M_0(V)$	N
4631	$12^h 39^m 8$	+32°49'	Sc* III?	Em	a/af:	0.36	12.6 x 1.4	9.71	--	28.20	-
4632	40.0	+00 11	Sc* II-III	--	af	--	2.6 x 0.8	12.1	30.7	30.28	-
4635	40.2	+20 12	N?	--	--	--	1.5 x 0.9	13.0	--	--	-
4636	40.3	+02 57	E1	G2	k	--	1.4 x 1.3	10.8	--	30.28	-
4638	40.2	+11 43	E5	G3	g	--	1.1 x 0.5	12.2	--	30.28	-
4639	40.3	+13 31	S(B)b II-III:	--	-	0.52	2.4 x 1.5	12.11	30.5:	30.28	-
4643	40.8	+02 15	Sba	--	k	--	1.5 x 0.9	11.6	--	30.28	-
4647	41.0	+11 51	Sc**	--	f	0.36	2.0 x 1.5	12.05	--	30.28	*
4649	41.1	+11 49	E1	G7	k	0.85	2.0 x 1.8	9.88	--	30.28	-
4651	41.2	+16 40	Sep II:	--	g	0.37	3.0 x 2.5	11.21	30.4:	30.28	-
4653	41.4	-00 18	S <sup>-</sup> IV-V or N	--	-	0.31	2.2 x 1.9	12.69	--	30.28	-
4654	41.4	+13 23	Sc(*) II	--	a	0.47	4.2 x 2.2	11.03	30.2	30.28	-
4656	41.6	+32 26	Sc†	--	a	0.18	19.5 x 2.0	10.74	--	29.4	-
4658	42.1	-09 49	Sc(*) III	--	-	--	1.3 x 0.5	12.4	30.4	30.28	-
4660	42.0	+11 26	E5	G2	-	--	1.5 x 0.8	12.1	--	30.28	-
4665	42.6	+03 19	S(B)a	G3	k	--	3.1 x 2.1	11.8	--	30.28	-
4666	42.6	-00 12	Sc I-II:	--	g	0.50	3.8 x 0.8	11.40	30.8:	30.28	-
4668	43.0	-00 17	Pec	--	-	0.24	0.8 x 0.6	13.44	--	30.28	-
4670	42.8	+27 23	Ep	--	k?	--	0.9 x 0.7	12.7	--	--	-
4682	44.7	-09 48	S <sup>-</sup> IV?	--	-	--	1.4 x 0.8	13.1	--	30.28	-
4684	44.7	-02 28	Sa	--	-	--	1.8 x 0.5	12.2	--	30.28	-
4688	45.3	+04 36	S IV	--	-	--	2.2 x 2.2	13.0	30.0	30.28	-
4689	45.2	+14 01	Sb† II:	--	f	0.47	2.4 x 1.9	11.48	30.6:	30.28	-
4691	45.6	-03 04	Snn	--	-	--	2.2 x 1.7	11.8	--	30.28	-
4694	45.7	+11 15	E5	--	gk:	--	1.8 x 0.9	12.6	--	30.28	-
4697	46.0	-05 32	E4	G4	g	--	2.2 x 1.4	10.4	--	30.28	-
4698	45.8	+08 45	Sb <sup>-</sup> II:	G3	k	0.77	3.0 x 1.1	11.56	30.7:	30.28	-
4699	46.5	-08 24	Sa or Snn*	--	k	--	3.0 x 2.0	10.2	--	30.28	-
4700	46.5	-11 08	SD?	--	-	--	2.2 x 0.3	12.2	--	30.28	-
4701	46.6	+03 39	Sn	--	fg	--	2.2:x 1.6	12.8	--	30.28	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	m <sub>pg</sub>	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
4710	12 <sup>h</sup> 47 <sup>m</sup> 1	+15°26'	E8	--	g	--	3.3 x 0.5	12.0	--	30.28	--
4712	47.2	+25 44	S IV	--	f	0.37	1.8 x 0.9	13.46	30.5	--	--
4713	47.5	+05 35	Sc* III	--	af	--	2.2 x 1.3	12.3	30.3	30.28	--
4725	48.1	+25 46	S(B)b I	G4	g	0.55	10.0: x 5.5	10.07	30.2	30.2	--
4731	48.4	-06 08	Sbep II-III:	--	--	--	5.5 x 3.0	12.2	30.8:	30.28	--
4736	48.6	+41 23	Sb <sup>-</sup> p II:	G0	g:	0.57	--	8.91	28.1:	28.20	*
4742	49.2	-10 12	E3	G0	--	--	0.9 x 0.6	12.5	--	30.28	--
4747	49.4	+26 01	Pec(t)	--	--	0.44	--	12.90	--	--	--
4750	48.4	+73 09	Sap or Sbp	--	fg	--	1.7 x 1.5	12.2	--	31.3	--
4753	49.8	-00 55	Snn or Ep	--	--	--	3.3: x 1.1	10.7	--	30.28	--
4754	49.7	+11 35	Et?	G4	--	--	2.0 x 1.2	11.6	--	30.28	--
4756	50.3	-15 08	E2	--	--	--	0.5 x 0.4	13.3	--	30.28	--
4760	50.5	-10 13	E2	--	--	--	0.6 x 0.5	12.5	--	30.28	--
4762	50.4	+11 31	Snnt:	G2	gk	--	--	11.0	--	30.28	--
4763	50.6	-16 43	Sa	--	--	--	0.9 x 0.6	13.2	--	--	--
4765	50.7	+04 45	SD:	--	--	--	0.7 x 0.5	12.9	--	30.28	--
4771	50.8	+01 33	Sb III	--	f	--	2.8 x 0.5	12.9	30.6	30.28	--
4772	51.0	+02 27	Sa or Snn	--	--	--	2.3 x 1.0	12.6	--	30.28	--
4775	51.1	-06 21	Sc(*) III	--	a	--	1.7 x 1.6	11.6	29.6	30.28	--
4781	51.8	-10 16	Sc* II-III	--	a	--	2.3 x 1.1	11.7	30.3	30.28	--
4782	51.9	-12 11	E0(t?)	--	--	--	0.5 x 0.5	12.9:	--	30.28	--
4783	52.0	-12 12	E0(t?)	--	--	--	0.5 x 0.5	12.7:	--	30.28	--
4786	52.0	-06 35	E2p	--	--	--	0.6 x 0.5	12.7	--	30.28	--
4790	52.2	-09 58	Sc* III:	--	--	--	1.2 x 0.9	12.5	30.5:	30.28	--
4793	52.3	+29 13	Sc III	--	--	--	2.3 x 1.1	12.3	30.4	32.0	--
4795	52.5	+08 20	Snnt:	--	--	--	1.5 x 1.0	13.1	--	30.28	--
4800	52.4	+46 48	SD	F8	--	--	1.2 x 1.0	12.3	--	29.6	--
4808	53.3	+04 35	Sc* III	--	af	--	2.2 x 0.8	12.5	30.5	30.28	--
4814	53.3	+58 37	Sbp II:	G3	g	--	2.2 x 2.1	12.8	31.9:	32.1	--
4818	54.3	-08 15	S(B)nn?	--	--	--	3.1 x 0.9	12.1	--	30.28	--

NGC	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	$C_0$	Diameter	$m_{pg}$	$m-M_0(M)$	$m-M_0(V)$	N
4825	$12^h54^m.3$	$-13^\circ 24'$	E2p	--	-	--	$0.6 \times 0.5$	12.9	--	30.28	-
4826	54.3	+21 57	?	G7	fg	0.70	$6.5 \times 3.2$	9.27	--	27.8:	*
4845	55.5	+01 51	Sb III	--	fg	--	$4.2 \times 0.7$	12.6	30.3	30.28	-
4856	56.7	-14 46	S(H)a or Et	G5	k	--	$2.0 \times 0.7$	11.4	--	30.28	-
4861	56.7	+35 08	Ir IV-V	--	a	--	$3.9 \times 0.9$	12.9	28.8:	29.6	-
4866	57.0	+14 27	Sb <sup>-</sup> III:	G3	-	--	$6.8 \times 0.8$	12.0	29.8:	30.28	-
4868	56.8	+37 35	Sb <sup>+</sup> II:	--	-	--	$1.1 \times 1.0$	13.1	32.3:	--	-
4880	57.7	+12 45	Sa or Snn	--	-	--	$2.2 \times 1.3$	13.1	--	30.28	-
4889	57.7	+28 15	E4	G2	-	--	$1.0 \times 0.6$	13.2	--	34.12	*
4891	58.1	-13 09	N	--	-	--	$1.6 \times 1.4$	13.0	--	30.28	-
4899	58.3	-13 41	Sp	--	-	--	$1.8 \times 1.0$	12.7	--	30.28	-
4900	58.2	+02 46	Sc* III or Ir III	--	a	--	$1.7 \times 1.5$	11.9	29.9	30.28	-
4902	58.3	-14 15	Snb I	--	af	--	$2.1 \times 2.0$	11.7	31.8	32.1	*
4904	58.4	+00 15	S(B)c(n*)	--	af	--	$1.7 \times 1.0$	12.8	--	30.28	-
4914	58.4	+37 35	E2(p?)	--	-	--	$1.0 \times 0.8$	13.0	--	--	-
4915	58.8	-04 16	Sa	G5	-	--	$0.8 \times 0.7$	13.0	--	32.4	-
4928	$13^h00.3$	-07 49	S* IV	--	-	--	$0.9 \times 0.6$	12.9	29.9	30.28	-
4933	01.2	-11 14	Ep(t?)	--	-	--	--	12.8	--	30.28	-
4939	01.7	-10 05	N	--	-	--	$5.0 \times 1.9$	12.2	--	30.28	-
4941	01.6	-05 17	Sbp	F8:	-	--	--	12.0	--	30.28	*
4951	02.5	-06 14	Sn*:	--	-	--	$4.0 \times 1.0$	12.7	--	30.28	-
4958	03.1	-07 45	E6	G3	k	--	$1.7 \times 0.7$	11.5	--	30.28	-
4961	03.4	+28 00	Sc III:	--	f	--	$1.0 \times 0.7$	13.2	31.3:	--	-
4981	06.1	-06 31	Sc II-III	--	-	--	$2.0 \times 1.5$	12.2:	30.8:	--	-
4984	06.4	-15 15	Snn	--	gk	--	$1.1 \times 0.9$	11.9	--	--	-
4995	07.0	-07 34	Sbn	--	f	--	$2.0 \times 1.1$	11.9	--	31.2	-
4999	07.2	+01 55	N?	--	fg	--	$1.8 \times 1.6$	12.8	--	--	-
5005	08.5	+37 19	Sb <sup>-</sup> II	G0	g	0.57	$4.4 \times 1.7$	10.52	29.7	30.2	-
5012	09.3	+23 11	Sb II	--	f	--	$2.2 \times 1.2$	12.6	31.8	--	-
5016	09.7	+24 21	Sb II-III	--	f	--	$1.2 \times 0.8$	12.8	31.2	--	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
5017	13 <sup>h</sup> 10 <sup>m</sup> .3	-16°30'	E2	--	-	--	0.5 x 0.4	13.3	--	--	-
5018	10.3	-19 15	Sa	G7	-	--	1.7 x 1.0	12.2	--	32.2	-
5033	11.2	+36 51	Sb <sup>+</sup> t I-II:	G1	g	0.37	9.9 x 4.8	10.61	30.3:	30.0	-
5037	12.4	-16 20	Sb <sup>+</sup> III	--	-	--	1.6 x 0.5	13.1	30.8	--	-
5044	12.8	-16 08	E0	--	-	--	0.9 x 0.9	12.2	--	--	-
5054	14.3	-16 23	Sbnt II:	--	f	--	3.8 x 2.2	11.9	31.0:	--	-
5055	13.5	+42 17	Sb <sup>+</sup> II	F8	g	0.55	10.0: x 5.0:	9.26	28.4	28.20	-
5061	15.3	-26 36	E2	--	k	--	1.2 x 0.9	11.7	--	31.4	-
5068	16.2	-20 47	S(B)c III-IV	--	a	--	5.6 x 5.6	11.6:	29.2:	28.1:	-
5074	16.2	+31 44	Pec?	--	-	--	0.5 x 0.5	13.2	--	--	-
5077	16.9	-12 24	E3	G2	-	--	0.9 x 0.6	12.6	--	32.0	-
5084	17.5	-21 34	E8:	--	-	--	6.6: x 1.0	12.4	--	--	-
5085	17.6	-24 09	Sb II-III or Sbn	--	-	--	2.8 x 2.0	12.8	--	--	-
5087	17.7	-20 21	E4	G2	-	--	1.0 x 0.6	12.1	--	31.1	-
5088	17.7	-12 19	Sc* II:	--	-	--	2.0 x 0.6	13.2	32.3:	--	-
5101	19.0	-27 11	Sla or Sbb <sup>-</sup> I-II	--	-	--	5.6 x 4.7	12.5	--	--	-
5112	19.6	+39 00	Sc* II?	--	a	--	3.3 x 2.1	12.6:	--	--	-
5116	20.5	+27 14	Sb <sup>-</sup>	--	af:	--	1.5 x 0.7	12.9	--	--	-
5134	22.6	-20 51	Sb <sup>+</sup> III	--	-	--	1.8 x 0.8	12.4	30.0	--	-
5147	23.7	+02 22	Sc(*) II-III	--	a/af	--	1.4 x 1.0	12.1	30.7	--	-
5170	27.1	-17 42	Snn:	--	-	--	7.6 x 0.7	12.6	--	--	-
5172	26.9	+17 19	Sb <sup>+</sup> I-II	--	fg	--	2.2 x 1.3	12.5	32.2	--	-
5194	27.8	+47 27	Sc(t) I	F8:	f	0.46	10.0: x 5.5	8.88	28.6	28.20	-
5195	27.9	+47 31	Pec(t)	F5	-	0.92	--	10.47	--	28.20	-
5198	28.2	+46 56	E2	G2	k	--	0.6 x 0.5	12.9	--	32.1	-
5204	28.3	+58 40	Ir <sup>+</sup> IV	--	f	0.19	3.9 x 2.2	11.62	28.6	28.20	-
5230	33.0	+13 56	Sc I-II	--	af	--	1.6 x 1.5	12.9	32.4	--	-
5247	35.3	-17 38	Sb <sup>+</sup> I-II	--	f	--	4.4 x 3.7	11.9	31.4	--	-
5248	35.1	+09 08	Sc I	F8	f	0.36	6.1 x 4.4	10.36	30.1	30.3	-
5273	39.9	+35 55	E1(p?)	F0:	gk	--	0.9 x 0.8	12.6	--	30.2	-

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
5297	13 <sup>h</sup> 44 <sup>m</sup> 3	+44°05'	Sb <sup>+</sup> I	--	-	--	5.2 x 0.8	13.0	32.2	--	-
5300	45.7	+04 11	Sc II	--	-	--	3.1 x 2.1	12.3	31.4	--	-
5301	45.0	+46 24	Sb II-III:	--	-	--	3.4 x 0.5	13.0	31.3	31.3	-
5308	45.4	+61 14	E8	G5	k	--	2.1 x 0.5	12.5	--	31.7	-
5313	47.7	+40 13	Sb II:	--	-	--	1.3 x 0.7	13.0	32.2:	--	-
5322	47.6	+60 26	E2	G8	k	--	1.4 x 1.1	11.1	--	31.6	-
5324	49.4	-05 48	Sc II-III	--	-	--	1.7 x 1.6	12.6	31.2	--	-
5326	48.7	+39 49	Sb <sup>-</sup> III	--	-	--	1.5 x 0.4	13.1	30.8	--	-
5334	50.4	-00 53	S <sup>-</sup> IV-V	--	-	--	3.3 x 2.2	12.5	28.3:	--	-
5347	51.1	+33 43	S(B) <sup>+</sup> III	--	-	--	1.1 x 0.9	13.2	31.0	--	-
5350	51.2	+40 37	Sb I	--	f	--	2.1 x 1.3	12.9	33.0	--	-
5351	51.2	+38 09	Sb <sup>+</sup> II	--	af	--	2.4 x 1.1	13.0	32.2	--	-
5353	51.3	+40 31	E5	G3	-	--	1.3 x 0.6	12.1	--	31.8	-
5362	52.8	+41 30	Sbn	--	-	--	1.8 x 0.7	13.2	--	--	-
5363	53.6	+05 29	Ep	G0	-	0.79	2.0 x 1.4	11.13	--	30.2	-
5364	53.7	+05 15	Sb <sup>+</sup> I	G2	fg	0.46	6.2 x 3.0	11.04	31.2	30.7	-
5371	53.6	+40 43	Sb <sup>+</sup> I	G3	f	--	3.4 x 3.2	11.4	31.5	32.2	-
5376	53.6	+59 45	Sa:	--	fg	--	1.2 x 0.8	13.0	--	--	-
5377	54.3	+47 27	Sap	F8	gk	--	--	12.0	--	31.4	*
5380	54.8	+37 51	Sa	--	-	--	0.5:x 0.5:	13.2	--	--	-
5383	55.0	+42 05	SbB II	--	fg:	--	2.0 x 1.9	12.7	31.8	--	-
5395	56.5	+37 39	Sb <sup>+</sup> I:	--	af	--	2.1 x 1.0	12.4	32.6:	--	-
5406	58.2	+39 09	Sb <sup>+</sup> I-II	--	-	--	1.4 x 1.0	13.0	32.6	--	-
5422	59.0	+55 24	E9	--	gk	--	2.9 x 0.4	13.0	--	--	-
5426	14 <sup>h</sup> 00.8	-05 49	Sct	--	-	0.42	1.9 x 1.1	12.71	--	--	-
5427	00.8	-05 47	Sc(t) I	--	-	0.44	2.0 x 1.6	11.98	31.7	--	-
5430	59.1	+59 34	Sb(n)t	--	f	--	1.9 x 1.0	12.8	--	--	-
5444	01.2	+35 22	El	--	-	--	0.7 x 0.6	13.1	--	--	-
5448	00.9	+49 25	Sb <sup>+</sup> II-III	G2	fg	--	4.0 x 1.2	12.1	30.4	31.6	-
5457	01.4	+54 35	Sc I	F8	f	0.23	22.0:x20.0:	8.20	27.9	28.20	-



NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	$m-M_0$ (M)	$m-M_0$ (V)	N
5468	14h 4 <sup>m</sup> 0	-05°14 <sup>s</sup>	Sc II	--	--	--	2.0 x 1.9	12.4	31.5	32.2	--
5473	3.0	+55 08	E2	G3	--	--	0.9 x 0.7	12.4	--	31.7	--
5474	3.2	+53 54	Scn* I	--	f	0.24	4.0: x 2.9	11.22	--	28.20	--
5480	4.6	+50 57	Sc** I I-II:	--	f	--	1.1 x 0.9	12.6	32.0:	--	--
5485	5.5	+55 14	Sa:	G5	--	--	0.8 x 0.7	12.4	--	31.6	--
5493	8.9	-04 49	?	G5	--	--	0.8 x 0.5	12.5	--	32.0	--
5496	9.0	-00 56	S- IV:	--	--	--	3.8 x 0.5	12.8	29.8:	--	--
5523	12.6	+25 34	Sb II-III	--	f	--	3.9 x 0.8	12.8	31.2	--	--
5533	14.1	+35 35	Snn	G0	gk	--	1.8 x 0.8	12.6	--	32.9	--
5534	15.0	-07 11	St	--	--	--	--	13.0	--	--	--
5548	15.7	+25 22	Snn?(t?)p:	F5:	g?	--	--	13.3	--	33.5	*
5557	16.4	+36 43	E1	G3	--	--	0.9 x 0.8	12.2	--	32.6	--
5566	17.8	+04 11	Sb <sup>+</sup> nt II-III:	G5	gk?	--	5.6: x 1.1	11.4	29.7:	30.8	--
5574	18.4	+03 28	?	G0	gk	--	0.9 x 0.3	13.4	--	31.1	--
5576	18.5	+03 30	E2	G1	k	--	1.0 x 0.8	12.0	--	30.9	--
5584	19.8	-00 10	Sc II'	--	--	--	2.6 x 2.0	12.2	31.3	--	--
5585	18.0	+56 57	S IV	--	fg	0.28	5.5 x 3.0	11.25	28.3	28.20	--
5595	21.5	-16 30	Sc1	--	--	--	1.4 x 0.8	12.4	--	--	--
5597	21.7	-16 33	Sbn	--	--	--	1.3 x 1.1	12.6	--	--	--
5600	21.4	+14 52	Sc1:	--	f	--	1.0 x 0.9	12.4	--	--	--
5605	22.3	-12 57	Sc I	--	--	--	1.3 x 1.0	13.1	32.7	--	--
5614	22.0	+35 05	Snt	G4	g	--	--	12.6	--	33.0	--
5631	25.1	+56 48	Sa or Ep.	G3	--	--	0.7 x 0.7	12.5	--	31.7	--
5633	25.6	+46 22	SD	F5	g	--	0.8 x 0.6	12.9	--	32.0	--
5638	27.1	+03 27	E1	G3	k	--	0.9 x 0.9	12.4	--	31.1	--
5641	27.1	+29 02	S(B)b <sup>-</sup> I-II:	--	--	--	2.1 x 0.9	13.1	32.7:	--	--
5645	28.1	+07 29	Scn* II-III:	--	f	--	2.0 x 1.0	12.9	31.5:	--	--
5653	28.0	+31 25	Sn:	--	g	--	1.2 x 0.9	12.9	--	32.8	--
5660	28.1	+49 50	Sc* II	--	af	--	1.8 x 1.7	12.3	31.4	--	--
5665	29.9	+08 18	Scn* I	--	f	--	1.1 x 0.9	12.7	--	--	--

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	mpg	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
5668	14 <sup>h</sup> 30 <sup>m</sup> 9	+04°40'	Sc* II-III	F0	f	--	2.5 x 2.3	12.2	30.8	31.2	-
5669	30.3	+10 08	Sc III	--	af	--	3.3 x 2.4	12.5	31.6	--	-
5676	31.0	+49 41	Sc* II:	--	f	--	3.0 x 1.3	11.7	30.8:	31.9	-
5678	30.7	+58 08	Sc(p?) II:	--	f	--	2.3 x 1.2	12.1	31.2:	32.0	-
5687	33.3	+54 42	Sa:	G3	k	--	1.0 x 0.6	12.8	--	31.8	-
5689	33.7	+48 57	Snn:	G2	k	--	- x 0.5	12.9	--	31.9	-
5690	35.2	+02 30	Sb I-III	--	a	--	2.8:x 0.6	12.9	31.2	--	-
5691	35.3	-00 11	Sn?	--	--	--	1.1 x 0.8	13.0	--	--	-
5701	36.7	+05 34	S(B)b <sup>-</sup> I-II	--	k	--	4.0 x 3.4	12.8	32.4	--	-
5713	37.6	-00 05	Sen*	F2:	a	--	2.0 x 1.8	11.8	--	31.4	-
5728	39.6	-17 03	S(B)b <sup>-</sup> II	--	--	--	2.0 x 0.8	12.4	31.4	--	-
5739	40.6	+42 03	Snn	--	--	--	--	13.1	--	--	-
5740	41.9	+01 54	Sb <sup>+</sup> II-III	--	--	0.57	2.2 x 1.0	12.55	30.8	--	-
5746	42.3	+02 10	Sb(n?)	G2	gk	0.86	6.2 x 0.8	11.57	--	31.3	-
5750	43.6	-00 01	Sb <sup>+</sup> III	--	--	--	1.6 x 0.8	12.6	30.3	--	-
5756	44.9	-14 39	Sep.	--	--	--	1.3 x 0.6	13.1	--	--	-
5757	45.0	-18 53	Sbhn:	--	--	--	1.3 x 1.2	12.6	--	--	-
5768	49.6	-02 20	Ir <sup>+</sup> IV:	--	--	--	1.4 x 0.6	12.9	29.9:	--	-
5775	51.5	+03 45	Sb or Sc	--	fg:	0.63	3.6 x 0.5	12.15	--	--	-
5791	56.0	-19 04	Sa	--	--	--	1.0 x 0.6	13.0	--	--	-
5792	55.8	-00 54	Sb(n?)p	--	--	--	6.6 x 1.0	12.9:	--	--	-
5796	56.6	-16 26	E0	--	--	--	0.7 x 0.7	12.8	--	--	-
5806	57.5	+02 05	Sb <sup>+</sup> III:	G0	g	--	1.8 x 0.8	12.4	30.1:	31.28	-
5812	58.2	-07 16	E1	G7	--	--	0.8 x 0.7	12.6	--	31.5	-
5813	58.7	+01 54	E1	G5	k	--	0.9 x 0.8	12.0	--	31.28	-
5820	57.2	+54 05	E5(t?)	G4	--	--	1.0 x 0.5	13.4	--	32.7	-
5831	15 <sup>h</sup> 01.6	+01 24	Ep	G5	k	--	0.6 x 0.5	12.7	--	31.28	-
5838	02.9	+01 18	Sa	G2	gk	--	3.2 x 0.7	11.7	--	31.28	-
5846	04.0	+01 48	E0	G0	k	0.78	0.9 x 0.9	11.16	--	31.28	-
5850	04.6	+01 44	Sbb <sup>-</sup> I	G4	g	0.50	2.6 x 2.2	11.56	31.6	31.28	-

NGC	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	C <sub>0</sub>	Diameter	m <sub>pg</sub>	m-M <sub>0</sub> (M)	m-M <sub>0</sub> (V)	N
5854	15 <sup>h</sup> 05. <sup>m</sup> 3	+02°45'	Sa:	G1	gk	--	1.8 x 0.4	12.6	--	31.28	--
5861	06.4	-11 08	Sep I?	--	-	--	2.3 x 1.1	12.4	--	--	--
5864	07.0	+03 14	E7p	--	gk	--	1.7 x 0.5	12.8	--	--	--
5866	05.1	+55 57	Eop	G2	k	--	2.8 x 1.0	10.9	--	30.0	--
5878	11.0	-14 05	Snn	G8	-	--	2.9 x 0.9	12.4	--	31.6	--
5879	08.4	+57 12	Sb II-III	F8	g	--	4.5 x 1.1	12.2	30.5	30.1	--
5885	12.4	-09 53	S <sup>-</sup> IV-Vp	--	-	--	2.4 x 2.4	12.4	--	--	--
5898	15.2	-23 55	E1(p?)	G2	-	--	0.8 x 0.7	12.6	--	31.7	--
5899	13.2	+42 14	Sb* I:	F5:	f	--	-	12.5	32.6:	32.2	--
5903	15.6	-23 51	E1	G3	-	--	0.8 x 0.7	12.7	--	32.0	--
5905	14.1	+55 42	S(B)b I:	--	f	--	4.4 x 3.2	13.1	33.2:	--	--
5907	14.6	+56 31	Sb <sup>+</sup> II:	G3	g	0.55	11.1 x 0.7	11.04	30.1:	29.3	--
5908	15.4	+55 36	Sb <sup>-</sup>	--	g	--	2.4 x 0.4	13.0	--	--	--
5915	18.8	-12 55	Sb <sup>+</sup> t or Sct	--	-	--	1.1 x 0.8	12.5	--	--	--
5921	19.5	+05 15	S(B)b <sup>+</sup> I-II	G0	fg	--	3.6 x 3.0	11.7:	31.3:	30.8	--
5936	27.6	+13 09	Sc I:	--	af	--	1.0 x 0.9	12.9	32.6:	--	--
5949	27.2	+64 55	SD	--	af	--	2.0 x 0.8	12.9	--	28.8:	--
5962	34.2	+16 46	Sc II	G0	f	--	2.4 x 1.8	11.9	31.0	31.6	--
5970	36.1	+12 20	Sc II-III	F8	g	--	2.3 x 1.6	12.4	31.0	31.7	--
5982	37.6	+59 32	E3(p?)	G7	k	--	1.2 x 0.8	12.3	--	32.5	--
5984	40.6	+14 22	Sb II-III:	--	-	--	2.6 x 0.5	13.0	31.3:	--	--
5985	38.6	+59 30	Sb I	G0	fg	--	4.9 x 2.2	11.9	32.0	32.1	--
6015	50.7	+62 28	Sc II	F8	af	0.36	5.6 x 1.7	11.69	30.7	29.8	--
6052	16 <sup>h</sup> 03.1	+20 41	?	--	a?	--	0.8 x 0.6	13.0	--	--	--
6070	07.4	+00 50	Sc I	F8	f	--	3.2 x 1.8	12.3	31.9	31.7	--
6106	16.3	+07 31	Sb <sup>+</sup> II-III:	--	f	--	2.1 x 1.0	12.9	31.1:	--	--
6118	19.3	-02 11	Sb II	--	-	--	4.3 x 1.3	12.3	31.2	--	--
6181	30.1	+19 56	Sc I	G2	f	--	2.0 x 0.9	12.3	31.9	31.8	--
6207	41.3	+36 56	Sc II:	F8:	-	--	2.0 x 1.1	12.3	31.3:	30.2	--
6217	34.8	+78 18	Sc* I-II	F8:	af:	--	-	11.8	31.1	31.0	--

NGC	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	mpg	$m-M_0$ (M)	$m-M_0$ (V)	N
6239	$16^h48^m.4$	$+42^\circ 50'$	Sbt	--	af	--	$2.1 \times 0.8$	12.9	--	--	--
6340	$17^h11.1$	$+72 22$	Sap or Snn;	G3	g	--	$2.0 \times 1.8$	12.0	--	31.9	--
6384	29.9	$+07 06$	Sb I;	G5	gk	0.46	$5.0 \times 4.0$	11.23	30.9;	31.4	--
6412	30.8	$+75 45$	Sc II	--	af	0.27	$1.9 \times 1.5$	12.19	31.1	31.2	--
6482	49.8	$+23 05$	E3(p?)	G0	k	--	$0.9 \times 0.6$	12.2	--	33.1	--
6503	49.9	$+70 10$	Sb III;	--	af	0.41	$4.5 \times 1.0$	10.77	28.3;	27.3;	--
6574	$18^h09.5$	$+14 58$	Sb;	F8	f	--	$0.9 \times 0.7$	12.8	--	32.1	--
6643	21.2	$+74 33$	Sc I-II	G0	--	0.39	$3.0 \times 1.3$	11.61	30.8	31.3	--
6814	$19^h39.9$	$-10 25$	Sb <sup>+</sup> I	F0;	--	--	$2.0 \times 2.0$	12.2	31.8	31.0	*
6822	42.1	$-14 53$	Ir IV-V	Em	--	--	$16.2 \times 11.2$	9.21	24.6;	--	--
6835	51.8	$-12 42$	E8	--	--	--	$2.0 \times 0.3$	13.0	--	--	--
6907	$20^h22.1$	$-24 58$	S(h)b I-II;	--	--	--	$2.5 \times 2.2$	12.1	31.6;	--	--
6946	33.9	$+59 58$	Sc I or (Sc II)	F5	af	0.41;	$9.0 \times 7.5$	9.67	--	27.6;	--
6951	36.5	$+65 56$	Sbp I-II;	--	f;	0.51	$3.3 \times 2.3$	11.84	30.8;	31.1	--
7137	$21^h45.9$	$+21 56$	SD;	--	f	--	$0.9 \times 0.9$	13.1	--	31.2	--
7171	58.3	$-13 31$	Sb <sup>+</sup> II	G0	--	--	$2.1 \times 0.9$	13.1	32.2	32.2	--
7177	58.3	$+17 29$	Sb <sup>-</sup> II or Sbn	G0	g	--	$2.1 \times 1.1$	12.0;	--	30.7	--
7184	59.9	$-21 04$	Sb <sup>+</sup> II-III	--	--	--	$5.1 \times 0.9$	12.0	30.3	--	--
7217	$22^h05.6$	$+31 07$	Sb <sup>-</sup> II?	G7	gk	0.63	$2.6 \times 2.3$	11.00	--	30.4	--
7218	07.5	$-16 54$	Sc III-IV	--	--	--	$2.1 \times 0.7$	12.7	30.4	31.4	--
7252	18.0	$-24 56$	Et or Pec	F3	--	--	--	13.1	--	33.4	--
7300	28.3	$-14 17$	Sb <sup>+</sup> I-II;	--	--	--	$1.9 \times 0.8$	13.2	32.8;	--	--
7302	29.7	$-14 23$	E3	G7	--	--	$0.9 \times 0.6$	13.1	--	32.2	--
7309	31.6	$-10 37$	Sc II	--	--	--	$1.4 \times 1.1$	13.1	32.2	--	--
7314	33.0	$-26 18$	Sc(*) I-II	F8;	af	--	$3.9 \times 1.9$	11.6	31.0	31.3	--
7331	34.8	$+34 10$	Sb I-II	G8	gk	0.54	$10.0 \times 2.3$	10.27	29.5	30.3	--
7332	35.0	$+23 32$	E7	G3	k?	--	$2.3 \times 0.6$	11.8	--	30.8	--
7371	43.4	$-11 16$	Sb III;	--	--	--	$1.0 \times 1.0$	12.9	30.6;	--	--
7377	45.1	$-22 35$	E1 or Sa	G2	--	--	$0.9 \times 0.8$	12.4	--	32.7	--
7392	49.2	$-20 53$	Sb II;	--	--	--	$1.5 \times 0.8$	12.6	31.7;	32.4	--

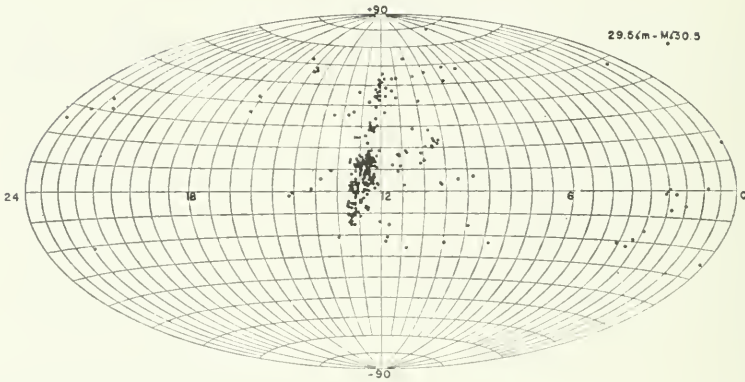
Name	$\alpha(1950)$	$\delta(1950)$	Type and Class	Sp	Y	$C_0$	Diameter	mpg	$m-M_0(M)$	$m-M_0(V)$	N
NGC 7448	$22^h 57^m 6$	$+15^\circ 43'$	Sc*(t) II:	G2	fg	-	$2.0 \times 1.0$	11.9	30.9:	32.1	-
7457	$58.6$	$+29 53$	Ep	G2	gk	-	$1.9 \times 1.0$	12.6:	--	29.5	-
7469	$23^h 00.7$	$+08 36$	Snn <sub>+</sub>	F5:	g?	-	$1.3 \times 1.0$	12.7	--	33.5	*
7479	$02.4$	$+12 03$	Sbb <sup>+</sup> I	G3	f	-	$3.4 \times 2.6$	11.6	31.6	32.1	-
7541	$12.2$	$+04 15$	Sc II:	F2	a	-	$2.9 \times 0.9$	12.6	31.7:	32.3	-
7585	$15.4$	$-04 56$	Snn	G0	-	-	$2.0 \times 1.5$	12.7	--	32.7	-
7600	$16.3$	$-07 52$	E6	G3	-	-	$1.1 \times 0.4$	13.0	--	32.7	-
7606	$16.5$	$-08 46$	Sb <sup>+</sup> I	G2	fg	-	$4.4 \times 1.5$	11.6	31.7	32.0	-
7619	$17.8$	$+07 55$	E1	G5	k	-	$1.0 \times 0.9$	12.4	--	33.0	-
7625	$18.0$	$+16 57$	Ep	G1	g?	-	$1.0 \times 0.8$	13.2	--	31.5	-
7626	$18.2$	$+07 56$	E2(p?)	G3	-	-	$1.0 \times 0.8$	12.7	--	32.8	-
7640	$19.7$	$+40 35$	S(B)b <sup>+</sup> II:	--	f	0.13	$11.0 \times 1.4$	11.31	30.0:	29.2	-
7678	$26.1$	$+22 09$	Sc I	F5:	af	-	$1.7 \times 1.1$	12.5	32.1	32.8	-
7679	$26.2$	$+03 15$	Snn	F5	-	-	$1.4 \times 0.8$	13.2	--	33.6	-
7716	$33.9$	$+00 01$	Sb II:	G8	g	-	$1.3 \times 1.1$	12.9	32.0:	32.2	-
7721	$36.2$	$-06 48$	Sc II	--	-	-	$3.0 \times 0.9$	12.4	31.5	--	-
7723	$36.4$	$-13 14$	Sbn	--	-	-	$2.2 \times 1.6$	11.8	--	31.6	-
7727	$37.3$	$-12 34$	Snn(t?)	G8	-	-	-	11.6	--	31.5	-
7741	$41.4$	$+25 48$	Sbc II	F2	af	0.30	$3.3 \times 2.5$	11.63	30.6	29.9	-
7742	$41.8$	$+10 29$	Eop	G0	gk?	-	$0.9 \times 0.9$	12.2	--	31.4	-
7743	$41.8$	$+09 39$	Sa?	G0	gk	-	$1.6 \times 1.4$	12.3	--	31.5	-
7769	$48.5$	$+19 52$	Scnt	--	f	-	$1.3 \times 1.2$	12.5	--	33.3	-
7782	$51.4$	$+07 42$	Sbn	--	-	-	$2.1 \times 0.9$	13.1	--	--	-
7785	$52.8$	$+03 38$	E:5	G5	-	-	$1.1 \times 0.6$	13.0	--	33.0	-
7814	$0^h 00.7$	$+15 51$	Sb-	G3	k	-	$6.0 \times 1.0$	11.7	--	30.5	-
IC 749	$11^h 56.0$	$+43 01$	Sc(*) III:	--	-	-	$1.8 \times 1.1$	13.2	31.2:	--	-
750	$56.3$	$+43 00$	Sb <sup>-</sup> n:	--	-	-	$1.7 \times 0.6$	13.0	--	--	-
1953	$3^h 31.4$	$-21 39$	Sc* II-III:	--	-	-	$2.1 \times 1.9$	12.5	31.1:	--	-
2537	$10^h 01.7$	$-27 19$	S <sup>-</sup> IV-V	--	-	-	$2.1 \times 1.5$	12.8	28.3:	--	-
2627	$11^h 07.5$	$-23 28$	Sb <sup>+</sup> II:	--	-	-	$2.0 \times 1.6$	12.8	31.8:	--	-

Name	$\alpha$ (1950)	$\delta$ (1950)	Type and Class	Sp	Y	$C_0$	Diameter	$m_{pg}$	$m-M_0(M)$	$m-M_0(V)$	N
An I	$1^h 02^m 6$	-06°29'	S(B) IV-V	--	-	--	4.5 x 3.4	12.8	28.7:	--	*
HA 85	$5^h 09.5$	-14 50	N	--	-	--	2.2 x 1.5	13.1	--	--	-
R 80	$12^h 29.9$	+00 38	S V	--	-	0.24	3.7 x 1.7	12.52	--	30.28?	-
An 3	46.8	-09 51	S <sup>-</sup> IV-V:	--	-	--	2.1 x 1.7	12.5	28.3:	30.28?	-
An 4	52.6	+00 23	N?	--	-	--	2.3 x 1.1	12.9	--	30.28	-
F 703	$15^h 11.0$	-15 18	S <sup>-</sup> IV-V or N	--	-	--	2.4 x 1.9	12.8	--	--	-

## REMARKS

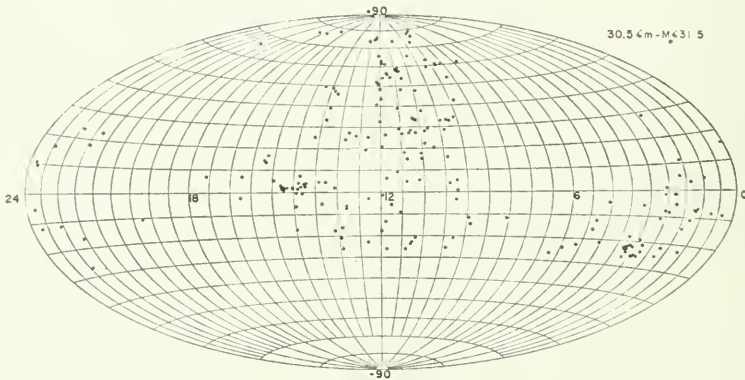
- NGC 178 Late type, has one resolved arm.  
 NGC 275 Interacting with NGC 274.  
 NGC 474 Fuzzy nucleus surrounded by segments of nebulous ring. Interacting with NGC 470.  
 NGC 520 Colliding galaxies?  
 NGC 1068 Seyfert galaxy. Halo.  
 NGC 1415 Diameter does not include faint "tidal arms".  
 NGC 2149 Probably galactic reflection nebula.  
 NGC 2207 Interacting pair.  
 NGC 2782 Seyfert galaxy.  
 NGC 2835 Spiral arms of low surface brightness.  
 NGC 2993 Interacting with NGC 2992.  
 NGC 3077 Seyfert galaxy.  
 NGC 3227 Seyfert galaxy.  
 NGC 3368 This galaxy (M96) is a member of a small class of objects with a bright main body with tightly coiled spiral arms surrounded by a faint halo. Other members of this class are NGC 1068 (M77) and NGC 4736 (M94).  
 NGC 3516 Seyfert galaxy.  
 NGC 3690 Two colliding galaxies.  
 NGC 4038 Colliding with NGC 4039.  
 NGC 4051 Seyfert galaxy.  
 NGC 4151 Seyfert galaxy.  
 NGC 4258 Seyfert galaxy.  
 NGC 4342 Identification uncertain.  
 NGC 4568 Interacting with NGC 4567.  
 NGC 4647 Interacting with NGC 4649.  
 NGC 4736 M94, has halo similar to those of M77 and M96.  
 NGC 4826 M64 is a very peculiar object. A blue plate taken with the 74-in. telescope shows tightly wound rather fuzzy spiral arms on which a large obscuring cloud is superimposed. The declination given in H.A. 88 should be increased by 10'.  
 NGC 4889 In Coma cluster. Misidentified as NGC 4872 in H.A. 88.  
 NGC 4902 Both radial velocity and luminosity classification place this galaxy beyond the Virgo Cluster.  
 NGC 4941 The structural peculiarities of this galaxy are similar to, but less pronounced, than those in the Seyfert galaxy NGC 4151.  
 NGC 5377 Appearance similar to that of NGC 4941 and the Seyfert galaxy NGC 4151.  
 NGC 5548 Seyfert galaxy.  
 NGC 6814 Seyfert galaxy.  
 NGC 7469 Seyfert galaxy.  
 Anon 1 Has S V companion at  $\alpha(1855) = 0^{\text{h}}54^{\text{m}}$ ,  $\delta(1855) = -8^{\circ}25'$ .

$29.5 \leq m-M_0 \leq 30.5$  (Figure 3)



In this distance interval the Virgo cluster is the most prominent feature. Early type galaxies predominate in the nucleus of the cluster at  $\alpha \simeq 12^{\text{h}}25^{\text{m}}$ ,  $\delta \simeq +13^\circ$ . A secondary clustering of predominately late type galaxies is located at  $\alpha \simeq 12^{\text{h}}20^{\text{m}}$ ,  $\delta \simeq +5^\circ$ . The figure shows the southern extension of the Virgo cluster as a loose grouping of galaxies near  $\alpha \simeq 12^{\text{h}}50^{\text{m}}$ ,  $\delta \simeq -10^\circ$ . The Ursa Major cluster ( $\alpha \simeq 12^{\text{h}}00^{\text{m}}$ ,  $\delta \simeq +50^\circ$ ) and the NGC 4274 group ( $\alpha \simeq 12^{\text{h}}15^{\text{m}}$ ,  $\delta \simeq +30^\circ$ ) also show on the figure. The NGC 4274 group is probably somewhat closer to us than the Virgo Cluster. The NGC 3193 group. ( $\alpha \simeq 10^{\text{h}}10^{\text{m}}$ ,  $\delta \simeq +23^\circ$ ) is possibly associated with the Virgo cluster complex.

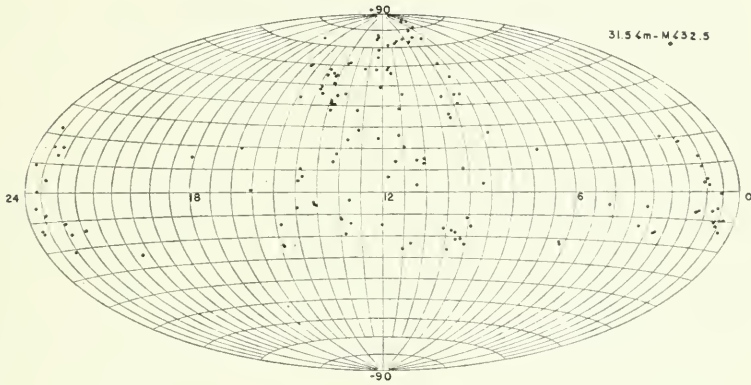
$30.5 \leq m-M_0 \leq 31.5$  (Figure 4)





The figure shows a concentration of galaxies near  $\alpha \simeq 14^{\text{h}}40^{\text{m}}$ ,  $\delta \simeq +2^{\circ}$ , which are apparently associated with the NGC 5850 group. The figure also shows a loose clustering of galaxies near  $\alpha \simeq 3^{\text{h}}25^{\text{m}}$ ,  $\delta \simeq -23^{\circ}$ .

$31.5 \leq m-M_0 \leq 32.5$  (Figure 5)



No conspicuous clustering is apparent in this distance interval.

THE LUMINOSITY FUNCTION OF GALAXIES

The frequency with which different DDO classification types occur among all Shapley-Ames galaxies north of  $\delta = -27^{\circ}$  is given in Table II.

TABLE II  
 FREQUENCY OF CLASSIFICATION TYPES  
 Determined from the classification of 935 Shapley-Ames Galaxies

Type	Frequency
E (including S0)	22.9 per cent.
Sa	7.7
Sb	27.5
Sc (including S IV and S V)	27.3
Ir	2.1
Other	12.5

Luminosity classes could be assigned to about 80 per cent. of all galaxies of types Sb, Sc and Ir.

The number of Shapley-Ames galaxies of different types and luminosity classes is given in Table III.

TABLE III  
OBSERVED FREQUENCY OF SHAPLEY-AMES GALAXIES

Type	Sb	Sc	Ir
Class			
I	37.5	30.5	0
I-II	22	14	0
II	58	68	1
II-III	37	22	0
III	36	31.5	3.5
III-IV	0.5	9.5	2
IV		21	6
IV-V		8.5	4.5
V		1	0

Using the magnitude calibration of Table I the observed frequency distribution of galaxies over the luminosity classes may be converted to relative space densities, if one makes the following assumptions: 1. The distribution of galaxies throughout space is uniform. 2. The degree of completeness of the Shapley-Ames catalogue depends on apparent magnitude only, i.e. the Shapley-Ames catalogue does not discriminate against galaxies of a particular type or luminosity class.

The assumption of a uniform space distribution of galaxies is probably valid for galaxies of luminosity classes I to IV. However, for fainter objects the Shapley-Ames catalogue contains only galaxies in the immediate vicinity of the local group. The space density of galaxies in the vicinity of the local group is probably higher than average. The assumption of a uniform distribution of galaxies will therefore lead to an overestimate of the space density of objects of luminosity classes IV-V and V. This effect is compensated for to some extent by the fact that the Shapley-Ames catalogue is more incomplete for large galaxies of low surface brightness than for small galaxies of high surface brightness. The faint end of the computed luminosity function must however be regarded as quite uncertain.

TABLE IV  
RELATIVE SPACE DENSITY OF GALAXIES

Luminosity Classes	Approximate magnitude limits	Sb	Sc	Ir	Total
I, I-II	-20.5 to -19.5	0.9	1.0	0	1.9
II, II-III	-19.5 to -18.5	7.5	4.9	0.04	12.4
III, III-IV	-18.5 to -17.5	11	10	1.3	22.3
IV	-17.5 to -16.5	0	17	4.8	21.8
IV-V	-16.5 to -15.5	0	36:	19:	55:

Table IV gives the relative space densities for galaxies of different types and luminosity classes. The data have been normalized in such a way that they refer to a volume which contains one supergiant galaxy of type Sc. The table shows that the luminosity function of galaxies increases rapidly as one goes to fainter absolute magnitudes. The results for Sc and Ir galaxies are in fair agreement with those obtained by van den Bergh (1960a).

It is of some interest to note that the ratio of the number of spiral galaxies to the number of irregular galaxies increases rapidly as one goes to intrinsically brighter galaxies.

## REFERENCES

- van den Bergh, S. 1960a, *Ap. J.*, vol. 131, p. 215; 1960b, *Ap. J.* (in press).  
 Holmberg, E. 1958, *Lund Medd.* II, no. 136.  
 Humason, M. L., Mayall, N. U., and Sandage, A. R. 1956, *A.J.*, vol. 61, p. 97.  
 Morgan, W. W. 1958, *Publ. A.S.P.*, vol. 70, p. 364.  
 Pettit, E. 1954, *Ap. J.*, vol. 120, p. 413.  
 Shapley, H. and Ames, A. 1932, *Harv. Ann.*, vol. 88, no. 2.  
 Stebbins, J. and Whitford, A. E. 1952, *Ap. J.*, vol. 115, p. 284.

